

9. *Contributions to the Crustacean Fauna of South Africa.*—By K. H. BARNARD, M.A., D.Sc., F.L.S., Assistant Director.

No. 8. FURTHER ADDITIONS TO THE LIST OF AMPHIPODA.

(With Plate XXXIV.)

THE final report on the Amphipods collected by the Cape Government trawler S.S. "Pieter Faure" during the years 1897–1907 is presented in the following pages.

This last portion of the collection has proved extremely interesting, as it contained a number of species from deep water off Cape Point, some of which were already known from the North Atlantic, while others appear new to science.

With regard to the depths at which the specimens are stated to have been captured, it must be borne in mind that the "Pieter Faure" used no closing nets, so that while in the case of a particular species the correctness of the data may be gauged by analogy with records of the same species or other species of the same family in other parts of the world, the data cannot be used in a critical case to determine whether a species (*e.g.* one of the *Phronimidea*) is benthic or pelagic.

A small number of littoral species have been included which have come to hand since the publication of my last paper.

Altogether 36 species and 1 variety are added to the local fauna list, bringing the total number up to about 207. Further collecting, both in littoral and deeper waters, will certainly bring still more additions.

References to the literature on the families have not been included, as they are to be found in Stebbing's General Catalogue, 1910, or my 1916 paper, except where the family has not previously been recorded from South Africa, or where an important paper has appeared since 1916.

The types of all new species are in the South African Museum.

My thanks are again due to my friend Mr. F. W. Edwards, of the British Museum, for tracings of figures; to Mr. H. C. Burnup of

Maritzburg, who submitted for identification a series of Natal Amphipods collected by him while pursuing his special favourites—the Mollusca ; and to Mr. H. W. Bell-Marley, who has also sent many interesting specimens for identification.

TRIBE GAMMARIDEA.

FAMILY LYSIANNASIDAE.

Gen. TRISCHIZOSTOMA Boeck.

1861. *Trischizostoma*. Boeck, Forh. Skand. Naturf. Möde, 8, p. 637.
 1916. „ Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3,
 p. 106 (references).

Trischizostoma paucispinosum Brnrd.

1916. *Trischizostoma paucispinosum*. Barnard, *loc. cit.*, p. 107,
 pl. xxvi, fig. 1.

Two further specimens of this species were found in a sponge (Cape Point, N.E. $\frac{1}{4}$ N., distant 18 miles, 135 fathoms. S.S. "Pieter Faure," 27/2/02. S.A.M., No. A 4530). Both apparently are males, measuring 15 mm. The agreement with the original description is maintained. In the comparison with *T. remipes*, however, there was a rather ambiguous statement, namely, that none of the joints of the peraeopods except the 2nd joints in the 3rd-5th peraeopods were expanded. By this it might be understood that the 3rd-5th peraeopods resembled those of *raschi* and *nicaeense*. Such is not the case ; the 5th peraeopod is of the same type as in *remipes*, but the 5th and 6th joints are not so strongly expanded. Comparison of further examples has shown that the two species cannot be distinguished on this character alone.

The only reliable characters for distinguishing this species from *remipes* are the palmar armature of the 1st gnathopod, feeble in the former, well developed in the latter species ; and the side-plates, which are much deeper in proportion to their segments in *paucispinosum* than in *remipes*.

Trischizostoma serratum n. sp.

(Plate XXXIV, fig. 1.)

Five specimens seem to deserve a separate name on account of the character of the 1st gnathopod, although in other respects they are closely allied to *remipes*.

Eyes reniform, slightly widened above, nearly meeting on the top of the head. Rostrum short, deflexed. Side-plates and other characters, except the 1st gnathopod, as in *remipes*.

First gnathopod, 6th joint transversely oval, palm straight or concave, defining angle rather strongly produced to a blunt point, with 1-2 stout blunt spines and 1 long falciform spine; palm quite entire, armed with 7 stout marginal and 5 stout submarginal spines; finger strongly arcuate distally, closing over the long spine, but within the actual apex of the produced defining angle, inner margin with a series of about 16 conical denticles at regular distances apart.

The structure of this gnathopod is very striking and quite distinct from those of the other species. The typical development is found in the 3 specimens (A 4531), measuring 8, 6, and 4 mm. respectively. But in specimen A 4532, 8 mm. in length, the defining angle is quadrate, only very slightly produced, and the long spine is straight and apically acute; the palmar spines also are more slender and acute; the finger is denticulate, but not so strongly.

Further, in specimen A 4533, 7 mm. in length, the palmar spines are even more slender and the finger is very obscurely denticulate, the whole hand and finger bearing a strong likeness to that of *paucispinosum*. In other respects both these latter specimens agree with the three typical ones.

None of the specimens seem to be sexually mature. No transitional forms were found amongst the examples of *remipes* in the collection.

Length.—Up to 8 mm.

Colour.—In spirit, yellowish, eyes dark red.

Locality.—Umhloti River, N. by W. $\frac{1}{2}$ W., distant 8 miles, 40 fathoms, 3 specimens; Itongazi River, N.W. $\frac{3}{4}$ W., distant 3 miles, 25 fathoms, 1 specimen; Port Shepstone, N., distant 8 miles, 36 fathoms, 1 specimen. All localities on Natal coast. S.S. "Pieter Faure," 18/12/00, 14/3/01, and 14/3/01. (S.A.M., Nos. A 4531-3.)

Trischizostoma remipes Stebb.

1908. *Trischizostoma remipes*. Stebbing, S.A. Crust., pt. 4, p. 61, pl. xxxiv.

1910. ,, ,, *Ibid.*, Gen. Cat. S.A. Crust., p. 448.

Between 50 and 60 specimens, excluding juveniles taken from the brood-pouch, have been examined.

The characters enumerated by Stebbing are constant, except that

the 6th joint of 5th pereopod is not always longer than the 5th joint, though it is never shorter.

The eyes in juveniles from the brood-pouch and quite young specimens are oval or reniform. The approximation of the two eyes on the top of the head does not seem to follow *pari passu* with growth, nor can it be correlated with sex. In some specimens the eyes actually meet and coalesce in the middle dorsal line, but these are not the largest specimens.

The minute serrulation of the palm of the 6th joint of the 1st gnathopod is very characteristic, and never absent except in the juveniles taken from the brood-pouch. In these the palm is quite smooth, with only a single spinule at the defining angle, as figured by Sexton (Proc. Zool. Soc. Lond., 1908, pt. 2, pl. xix, fig. 10) for *T. raschi*.

Length.—Up to 20 mm.

Colour.—In spirit, yellowish or pinkish, eyes dark red.

Locality.—Several localities from Cape Point to Cape Morgan, 23–154 fathoms.

Most of the specimens were loose in bottles containing various organisms, but in one case numerous specimens, ♂♂ and ovigerous ♀♀, were found in galleries in a sponge. These galleries had the appearance of having been excavated by the Amphipods.

The northern species are usually found on fishes or star-fish, but also free-swimming (Sexton, *loc. cit.*, p. 396).

Gen. ACIDOSTOMA Lillj.

1865. *Acidostoma*. Lilljeborg, N. Acta. Soc. Upsala, ser. 3, vol. vi, No. 1, pp. 18, 34.
 1890. „ „ G. O. Sars, Crust. Norw., vol. i, p. 37.
 1906. „ „ Stebbing, Das Tierreich, 21, p. 14.

Acidostoma obesum (Bate).

1862. *Anonyx obesus*. Bate, Cat. Amph. Brit. Mus., p. 74, pl. xii, fig. 1.
 1865. *Acidostoma obesum*. Lilljeborg, *loc. cit.*, p. 34, pl. v.
 1890. „ „ Sars, *loc. cit.*, p. 38, pl. xiv, fig. 2.
 1906. „ „ Stebbing, *loc. cit.*, p. 14.

Agreeing entirely with Sars' description and figures except in two details. The flagellum and accessory flagellum of the 1st antenna are respectively 5- and 4-jointed instead of 7- and 5-jointed. There

is absolutely no trace of the rudimentary palp on the outer margin of the outer plate of the 1st maxilla.

Length.—5 mm.

Colour.—In spirit, pale pinkish, with numerous darker specks, as shown in Sars' figure, eyes pinkish.

Locality.—Duminy Point (off Saldanha Bay), E. by N. $\frac{1}{2}$ N., distant 8 miles, 87 fathoms, 2 specimens. S.S. "Pieter Faure," 17/3/02. (S.A.M., No. A 6050.)

Geogr. Distribution.—North Atlantic, West coast of Europe.

PHOXOSTOMA n.g.

Close to *Acidostoma*, but with well-developed 2-jointed palp on the 1st maxilla; inner plate of maxilliped elongate, gnathopod 2 minutely chelate, uropod 3 not very small and telson cleft.

Phoxostoma algoense n. sp.

(Plate XXXIV, fig. 2.)

♀. Body moderately robust. Eyes large, reniform, meeting on the top of the head. Antero-lateral angles of head subacute. Peraeon and pleon dorsally and subdorsally with scattered setules. Side-plates deep, 1 concealing base of 2nd antenna, widened below, 2 not concealing lower front corner of 1, 2 and 3 scarcely widened below, 4 deeper than its greatest length, lower margin quite even from lower front angle to hinder angle, which is subacute, hind margin deeply excavate. Postero-inferior angle of pleon segment 1 rounded, of segment 2 quadrate with sharp apex, of segment 3 also quadrate, but with the actual apex rounded off. None of the pleon segments dorsally carinate or impressed.

Telson a little longer than broad, narrowing distally, the lateral margins straight or slightly convex, cleft or deeply insinuate nearly to the centre, apices rounded with a setule on each.

First antenna, 2nd joint nearly half length of 1st, 3rd half 2nd, flagellum not equal to 1st peduncular joint, 7-jointed, accessory flagellum shorter than flagellum, 4-jointed.

Second antenna slender, not longer than 1st, ultimate peduncular joint longer than penultimate, flagellum 8-jointed.

Mouth-parts styliform, projecting below the anterior side-plates.

Epistome and upper lip continuous, very narrow, boat-shaped, the keel in profile appearing evenly convex, as in *Acidostoma*.

Lower lip, lobes narrow, lanceolate, apically acute.

Mandible slender, cutting-edge feeble, molar obsolete, palp attached far back, 2nd joint much the longest, 3rd longer than 1st, somewhat falcate, 2nd and 3rd with apical setae only.

First maxilla, outer plate narrow, tapering, apex with 6 denticulate spines and several setules, inner plate narrow, apex with 7 long setae, longer than the plate itself, palp slender, apex narrowed subacutely, extending to apex of outer plate, with a few minute setules, 2-jointed.

Second maxilla, both lobes narrow, lanceolate, apex of outer plate setulose on outer margin, on inner margin with a row of rather stouter setae regularly and closely set, inner plate apically unarmed.

Maxilliped, inner plate narrow elongate, extending almost to apex of outer plate, distally setulose, apex truncate, outer plate broad, inner apex rectangular, margin perfectly entire, palp extending very little beyond outer plate, 4th joint rudimentary, stout, unguiform, apex minutely bifid.

First gnathopod simple, 6th joint longer than 5th, tapering evenly, lower margin spinulose.

Second gnathopod minutely chelate, 5th joint longer than 6th, 6th oblong, lower apex shortly produced, 7th minute, unguiform, 6th densely setose (*cf.* Sars' figure of *Ambasia danielssenii* Boeck, Crust. Norw., vol. i, pl. xvii, fig. 1).

First and second peraeopods moderately stout.

Third to fifth peraeopods, 2nd joint broadly expanded, hind margin with scarcely visible serrulations, distal joints moderately stout.

Uropod 3 well developed, biramous. All the uropods feebly armed with spinules.

Length.—9 mm.

Colour.—In spirit, pinkish, eyes dark red.

Locality.—Algoa Bay, 36 fathoms. 1 ovigerous ♀. S.S. "Pieter Faure," 25/9/01. (S.A.M., No. A 4541.)

Gen. AMARYLLIS Hasw.

1880. *Amaryllis*. Haswell, Tr. Linn. Soc. N.S.W., vol. iv, p. 253.

1916. ,, Barnard, Ann. S.A. Mus., vol. xv, pt. 3, p. 114 (references).

Amaryllis conocephalus n. sp.

Extremely close to *A. rostrata* Chevreux (1911, Bull. Inst. oc. Monaco, No. 204, p. 1, fig. 1) from the N. Atlantic, but clearly distinguished by the following features :

Head much more conical and produced, equal to the first 3 segments together, antero-lateral angles bevelled off. Side-plate 4 distinctly longer than deep, as in *A. bathycephalus* Stebb. Antenna 1 only twice the length of the head, 3rd peduncular joint a little more than $\frac{1}{3}$ 2nd, flagellum 7-jointed, 1st joint nearly as long as 3rd peduncular joint, nonsetose. Antenna 2 subequal to 1st, ultimate peduncular joint $\frac{1}{2}$ penultimate, flagellum 8-jointed. No calceoli on either flagellum. Palp of maxilliped more robust than in Chevreux's figure. Uropod 3, outer ramus a little longer than inner, no plumose setae.

Other characters as in *rostrata*.

The differences in the antennae and uropod 3 might well be due to sex, similar differences being found in *A. tenuipes* (Walker), 1904, and in *A. macrophthalma* Hasw., according to Stebbing and Barnard (*loc. cit.*). Chevreux's specimen of *rostrata* was a male; the present specimen is probably a female, but is nonovigerous. But the two first-mentioned characters are not so easily attributed to sex, and, until further specimens are discovered, may well constitute a separate species.

Length.—4.5 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 specimen. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4546.)

Gen. CHEIRIMEDON Stebb.

1888. *Cheirimedon*. Stebbing, Challeng. Rep., vol. xxix, p. 638.
1890. ,, G. O. Sars, Crust. Norw., vol. i, p. 34.
1893. ,, Della Valle, F. u. Fl. Neapel, vol. xx, p. 837.
1903. ,, Walker, J. Linn. Soc. Lond., vol. xxix, p. 41.
1906. ,, Stebbing, Das Tierreich, 21, pp. 66, 720.
1912. ,, Chilton, Tr. Roy. Soc. Edin., vol. xlvi, pt. 2, p. 467.

Cheirimedon pectinipalma n. sp.

♂. Antero-lateral corners of head subacute. Eyes indistinguishable. Side-plate 1 narrowed below to a subacute point, 2 not widened below, concealing the greater part of 1. Postero-inferior angle of pleon segment 3 slightly produced but rounded. Keel on pleon segment 4 not prominent.

Telson a little longer than broad, with a narrow cleft $\frac{1}{3}$ of length, apices rounded, with 1 spinule on each.

First antenna, 2nd and 3rd joints very short, flagellum 2-jointed, 1st long, densely setose, accessory flagellum 4-jointed, 1st nearly as long as 1st joint of flagellum.

Second antenna elongate, upper margin of peduncle with numerous little tufts of setules, flagellum ca. 33-jointed.

Upper and lower lips normal.

Mandible, molar rather more acuminate than in Sars' figure of that of *C. latimanus*.

First maxilla, outer plate with 8 denticulate spines, inner plate with 2 very stout, plumose setae, palp with 4 stout denticles at one end, and 1 spinule at the other end of the straight distal margin.

Second maxilla, both plates considerably stouter than in Stebbing's figure of *C. crenatipalmatus*.

Maxilliped, especially the margin of the outer plate, as figured for *latimanus*.

First gnathopod, 5th joint proportionately larger than in the other species, the inferior apex broadly rounded, 6th twice as long as broad, slightly widening distally, inferior margin slightly concave, palm transverse, minutely pectinate, a spine at the defining angle, finger matching palm, its inner margin with 4 minute spinules.

Second gnathopod as in *latimanus*.

First and second peraeopods rather slender.

Third to fifth peraeopods, 2nd joint expanded, hind margin entire, distal joints slender.

Uropods 1 and 2, rami subequal. Uropod 3, outer ramus 2-jointed, slightly longer than inner ramus.

Length.—7.5 mm.

Colour.—In spirit, pinkish.

Locality.—Cape Point, N.E. $\frac{1}{4}$ N., distant 46 miles, 760 fathoms, 1 ♂. S.S. "Pieter Faure," 27/9/03. (S.A.M., No. A 4542.)

This species is distinguished from the other species by the shape of the 5th and 6th joints of the 1st gnathopod, and the elongate 2nd antenna. The mouth-parts, except for one or two noteworthy details, agree with those figured for *crenatipalmatus* and *latimanus* by Stebbing and Sars respectively.

The 6th joint of the 1st gnathopod is very like that of *C. dentimanus* (Chevreux, Exp. Ant. Franc., p. 6, fig. 3, C, 1907), which species, according to Chilton (1912), is synonymous with *femoratus* Pfeffer. The 5th joint, however, is distinctive.

Gen. LAKOTA Holmes.

1908. *Lakota*. Holmes, Pr. U.S. Nat. Mus., vol. xxxv [1909], p. 498.

The two following species are assigned to this genus, in preference to *Chironesimus* Sars, on account of the narrow 6th joint of the 2nd gnathopod. This character and the relative widths of the 5th and 6th joints of the 1st gnathopod constitute the only differences between the two genera, and it must be confessed that the need for Holmes' genus is extremely doubtful. Moreover, Pearse (Pr. U.S. Nat. Mus., vol. xlv, 1913, p. 572) has described a species of *Chironesimus* differing from the type species in exactly those characters on which Holmes relied in instituting *Lakota*.

Therefore *C. multiarticulatus* Pearse must at least be transferred to *Lakota*, even if the latter genus be not sunk in *Chironesimus*.

Lakota adversicola n. sp.

Body rather compressed. Lateral lobes of head not much produced, subacute. Eyes apparently large and elongate, but very faint. Side-plate 1 narrowed below, 4 considerably expanded below, strongly emarginate behind. Pleon segment 1 with antero-inferior angle produced forwards, subacute, segment 2 with antero-inferior angle rounded, postero-inferior angle quadrate, inferior margin straight, postero-inferior angle of 3rd segment strongly produced, subacute and somewhat upturned.

Telson a little longer than broad, cleft extending scarcely beyond the centre, apices rounded with a terminal notch containing a spine, lateral margins without spines.

First antenna, 1st joint stout, a little longer than broad, dorsally and ventrally carinate but not produced, flagellum longer than peduncle, 13-jointed, 1st joint nearly equal to 1st peduncular joint, accessory flagellum not observed in either specimen.

Second antenna, 4th and 5th joints subequal, flagellum in ♂ ca. 40-, in ♀ 12-jointed, not calceoliferous.

Epistome not projecting, upper lip with a large compressed lobe in front.

Lower lip, lobes stout, apices setose.

Mandibles, cutting-edge convex, smooth with a small tooth at outer angle, secondary cutting-plate represented in left by a small elongate

process, apically enlarged and finely denticulate, spine-row with 3 spines, molar not very prominent, oblique, palp elongate, arising opposite or a trifle behind molar, 2nd joint $2\frac{1}{2}$ times as long as 3rd, which is twice 1st.

First maxilla, inner plate with 2 setae, outer plate with 2 spines, palp with 9 short, stout spine-teeth.

Second maxilla, inner plate a good deal shorter than outer.

Maxilliped, apex of inner plate truncate, concave, sloping inwards, with 3 small teeth, the largest on the inner apical angle, and 6 setae, outer plate reaching nearly to end of 2nd joint of palp, inner margin with ca. 12 closely set, low-rounded, knob-like denticles, apical margin with 2 longer, curved spines, 3rd joint of palp not quite as long as 2nd. (Cf. Stebbing's figure of the maxilliped of *Tryphosa antennipotens* in *Challeng. Rep.*, vol. xxix, pl. vi.)

First gnathopod, 6th joint not quite as long as 5th, both equally wide, 6th not expanding distally, palm transverse with several little fimbriate plates, defined by one stout spine and one shorter one, finger not overlapping palm, inner apex produced in an acute tooth lying close to, but not as long as, unguis.

Second gnathopod, 6th joint scarcely more than $\frac{1}{2}$ length of 5th, a trifle wider but not expanded, palm transverse, its lower angle sub-acutely produced, finger short, curved.

First and second peraeopods, 4th joint a little shorter than 6th, inner margin of 6th with 6 groups of spinules and 2 setae, finger scarcely $\frac{1}{3}$ length of 6th.

Third to fifth peraeopods, 2nd joint large, slightly tapering distally in peraeopods 3 and 4, not in 5, hind margin straight in 3 and 4, rather convex in 5, with very slight serrations, postero-inferior angle rounded, extending to end of 3rd joint, 4th not expanded, 5th a little longer than 4th in peraeopod 3, a good deal longer in 4 (lost in peraeopod 5), in peraeopod 3 6th joint longer than 5th, inner margin with 4 spinules, finger $\frac{1}{3}$ length of 6th, rest of the joints in peraeopods 4 and 5 lost.

Branchial lamellae simple.

First uropod, rami equal, feebly spinulose.

Second uropod, outer ramus as in 1st uropod, inner ramus as long as but broader for $\frac{2}{3}$ its length, then suddenly constricted, distal $\frac{1}{3}$ narrow, pointed, curved, inner distal angle of the broad portion with a long spine-seta, inner margin spinulose.

Third uropod, rami subequal, lanceolate, outer ramus with small 2nd joint, margins spinulose.

Length.—9 mm.

Colour.—In spirit, whitish, semi-pellucid.

Locality.—Cape Point, N.E., distant 40 miles, 560–700 fathoms, 1 ♂, 1 nonovigerous ♀. S.S. “Pieter Faure,” 17/9/03. (S.A.M., No. A 2812.)

Lakota rotundatus n. sp.

Body rather compressed. Side-plate 1 subtriangular, inferior angle subacute, concealed by side-plate 2, side-plates 2 and 3 of normal oblong shape. Antero-inferior angle of 1st pleon segment very slightly produced forward, antero- and postero-inferior angles of 2nd and 3rd rounded, inferior margin slightly convex.

Telson twice as long as broad, cleft to centre, each apex with a notch containing a spine, 2 spines on lateral margin.

First antenna, in ♂ 1st joint as long as wide, 3rd apically emarginate on inner side, so that 1st joint of flagellum almost touches 2nd peduncular joint, flagellum 2-jointed, 1st joint nearly equal to the remainder together, inner margin with numerous transverse rows of setae, accessory flagellum reaching to middle of flagellum, 5-jointed, 1st joint as long as the other 4; in ♀ similar but not so stout, accessory flagellum not observed.

Second antenna, in ♂ reaching to 2nd pleon segment, in ♀ not much longer than 1st antenna, 4th and 5th joints subequal, flagellum in ♂ 40-, in ♀ 10-jointed.

Mouth-parts as in the preceding species.

First gnathopod, 6th joint a little shorter than 5th, neither expanded, 6th slightly narrower distally, palm a little oblique, convex, cut into several teeth and defined by 2 spines, finger equal to palm, with a tooth on inner apex.

Second gnathopod, 5th joint a little longer than 3rd, slender, 4th and 6th subequal, oblong, palm transverse, defined by a short stout spine, finger curved, scarcely equalling palm.

First and second peraeopods, 4th joint not expanded, subequal to 6th, finger a trifle more than $\frac{1}{3}$ 6th.

Third to fifth peraeopods, 2nd joint expanded, oblong, narrower distally except in peraeopod 5, anterior margin convex in 3 and 4, concave in 5, hind margin straight in 3 and 4, convex in 5, slightly serrate, postero-inferior angle rounded, reaching beyond end of 3rd, 4th not expanded, 5th in peraeopod 5 slender, 6th in all peraeopods slender, finger $\frac{1}{3}$ 6th, also slender.

First uropod, rami equal, feebly spinulose.

Second uropod, inner ramus a little longer than outer, basal two-thirds broad, with a long spine-seta on rounded apex, then suddenly constricted, the distal one-third slender, curved, and pointed.

Third uropod, rami lanceolate, outer slightly longer than inner, with slender 2nd joint, margins spinulose, the inner margin setulose in addition.

Length.—9 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N.E. by E., distant 36 miles, 650 fathoms, 1 ♂, 1 ovigerous ♀; Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♂, 8 ♀♀; Cape Point, E. ½ N., distant 36 miles, 700–800 fathoms, 1 ♂. S.S. "Pieter Faure," 15/7/03, 20/8/03, and 28/8/03. (S.A.M., Nos. A 2813, A 4545, and A 5910.)

This species is exceedingly close to the preceding when the respective appendages are compared; but it is characterised by the shallower 1st side-plate and the rounded postero-inferior angle of the 3rd pleon segment. This latter feature also separates it from *Chironesimus debruynii* (Hoek) and the other species of *Lakota*.

Gen. ORCHOMENOPSIS G. O. Sars.

1891. *Orchomenopsis*. Sars, Crust. Norw., vol. i, p. 73.
 1893. „ Bonnier, Bull. Sci. Fr. Belg., vol. xxiv, p. 174.
 1903. „ Chevreux, Bull. Soc. Zool. Fr., vol. xxviii,
 p. 93.
 1906. „ Walker, J. Linn. Soc. Lond., vol. xxix,
 p. 44.
 1912. „ Chilton, Tr. Roy. Soc. Edin., vol. xlvi,
 pt. 2, p. 473.
 1913. „ *Ibid.*, Mitt. Naturh. Mus. Hamburg, vol.
 xxx, p. 56.

Orchomenopsis chilensis (Heller).

1865. *Anonyx chilensis*. Heller, Novara Crust., p. 129, pl. xi, fig. 5.
 1888. *Orchomene musculosus*. Stebbing, Challeng. Rep., vol. xxix,
 p. 673, pl. xx.
 1888. „ *abyssorum*. *Id.*, *ibid.*, p. 676, pl. xxi.
 1888. „ *cavimanus*. *Id.*, *ibid.*, p. 679, pl. xxii.
 1891. *Orchomenopsis obtusa*. Sars, *loc. cit.*, p. 74, pl. xxvi, fig. 2.
 1903. „ *proxima*. Chevreux, *loc. cit.*, p. 93, figs. 6a-c.

1903. *Orchomenopsis rossi*. Walker, *loc. cit.*, p. 45, pl. vii, figs. 18-23.
1912. „ *chilensis*. Chilton, *loc. cit.*, pp. 473-477 (synonymy and references).

Chilton, besides uniting all the above "species" under the one name, was inclined to regard South African specimens as also belonging to this widely distributed species, though possibly as a distinct variety. He points out the main features of the specimens collected at Saldanha Bay by the "Scotia," and in what respects they differ from the other "varieties."

Chilton also noted the resemblance of the 1st gnathopod to that of *O. nodimanus* Walker (1903, J. Linn. Soc. Lond., vol. xxix, p. 44, pl. vii, figs. 13-17). In view of the fact that some of the present specimens show an indication of the tubercle characteristic of that species (absent in Chilton's specimens), there seems some reason for including also *nodimanus* in the above synonymy.

For the sake of comparison I give the following detailed description:

Head subequal to 2nd peraeon segment and shorter than 1st; eyes long, oval, slightly larger below, in ♂ larger than in ♀, and occupying the greater part of the head, nearly meeting on top.

Side-plates 1-4 not more than $1\frac{1}{2}$ times as deep as their segments, widening distally, 5 a little deeper than long, 6 deeper than long, both bilobed, 7 longer than deep, postero-inferior angle rounded.

Postero-inferior angle of 1st pleon segment rounded, of 2nd and 3rd quadrate, inferior margin of 2nd straight, of 3rd convex.

Telson twice as long as broad, cleft to $\frac{4}{5}$ its length, lobes not dehiscent, 1 apical and 1 subapical spinule on each apex and 3 along each side-margin.

First antenna as long as head plus 1st peraeon segment, 1st joint very stout, only a little longer than broad, 2nd and 3rd together equal to half the 1st, 3rd with dense tuft of stout setae, flagellum as long as peduncle, 10-12-jointed, 1st joint largest, accessory flagellum a little more than half the primary flagellum, 6-jointed.

Second antenna in ♀ equal to head plus the first two peraeon segments, 3rd and 4th joints subequal and shorter than 5th, anterior margin of 4th and 5th with short dense setae, flagellum equal to peduncle, 15-jointed; in ♂ reaching almost or quite to the uropods.

Epistome not projecting.

Mandible, palp not longer than trunk.

First maxilla, inner plate very slender, with 2 apical setae, outer

plate with 7 strong apical dentate spines, palp with a number of small apical teeth.

Second maxilla slender, the two plates subequal in length (or inner a trifle shorter), but inner narrower, apices setose, inner margin of inner plate setulose.

Maxilliped, inner plate narrow, outer plate reaching almost to end of 3rd joint of palp, apex rounded, inner distal margin crenulate, 4th joint of palp small.

First gnathopod stout, greatly resembling that of *nodimanus* Wlkr., 2nd joint twice as long as broad, 3rd larger than 4th, 5th very short, hinder angle produced into a narrow, apically rounded lobe, 6th $\frac{3}{4}$ length of 2nd, narrowing distally, palm very short, transverse, forming a right angle with the inferior margin and cut into 4-5 little teeth (sometimes obscure), inferior margin with 2-3 setae and sometimes a very slight indication of a little tubercle about in the middle, finger overlapping palm, 1-3 small spinules and 2-3 setae at junction of palm and inferior margin.

Second gnathopod slender, 2nd joint equal to 4th-6th joints together, 3rd almost as long as 5th, 5th not greatly expanded, its lower distal surface scabrous, 6th equal to 4th, inferior apex produced in an acute "thumb," finger straight, equal to and fitting closely to thumb, anterior apex of 6th with several long stout setae.

No sexual differences in either gnathopod.

First and second peraeopods, 2nd joint equal to 4th and 5th together, 5th narrower than 4th and shorter than 3rd, 6th longer than 4th in 1st peraeopod, subequal in 2nd, inner margin with 5 spinules, 7th not quite $\frac{1}{2}$ 6th.

Third peraeopod, 2nd joint half as broad again as long, hind margin with very slight indents, anterior margin with ca. 12 spinules, 3rd very short with 1 spinule on anterior apex, 4th rather strongly expanded on hind margin, 5th subequal to anterior margin of 4th, 6th half as long again as 5th, anterior margin with 3 spinules, 7th nearly $\frac{1}{2}$ 6th, curved.

Fourth peraeopod, 2nd joint longer than broad, hind margin with very slight indents, anterior margin with ca. 9 spinules, 3rd very short, with 1 spine on anterior apex, anterior margin of 4th with 2 setae, of 5th with 2 spines, of 6th with 4 spines.

Fifth peraeopod, 2nd joint as broad as long, hind margin with very slight indents, anterior margin with ca. 8 spines, 3rd short, 1 spine on anterior margin and 1 on apex, 4th not so strongly expanded

as in 3rd and 4th pereopods, 4th and 5th subequal, 6th equal to 4th and 5th together.

First uropod very like that of *O. cavimanus* Stebb., peduncle with 5-6 spines on upper margin, rami subequal, shorter than peduncle, upper margins of both with 3 spines.

Second uropod, peduncle with 4 spines, rami subequal, shorter than peduncle, upper margins of both with 3 spines.

Third uropod, peduncle shorter than inner ramus, outer ramus longer than inner, outer margin of outer ramus with 4 spines, inner margins of both rami with plumose setae.

Length.—7 mm.

Colour.—In spirit, whitish or pale pinkish, eyes black or dark red-brown.

Locality.—Simons Bay, 10/3/96, and Somerset Strand, 28/4/98 (Dr. J. D. F. Gilchrist), ♂♂ and ♀♀; Dyer's Island, April 1915 (J. Drury), ♂♂ and ♀♀; Fish Hoek, False Bay, 8 fathoms, 2 ♀♀. S.S. "Pieter Faure," 24/12/02. (S.A.M., Nos. A 140-1, A 3384, and A 3806.)

Geogr. Distribution.—Chile (Heller, *A. chilensis*); South of Japan (Stebbing, *O. musculosus*); East of Buenos Aires, 1100 fathoms (Stebbing, *O. abyssorum*); Kerguelen Island (Stebbing, *O. cavimanus*); Norway, 100 fathoms (Sars, *O. obtusa*); Tropical Atlantic and Graham Land (Chreveux, *O. proxima*); Cape Adare, Antarctic (Walker, *O. rossi*); South Orkneys and Coats Land, 9-161 fathoms (Chilton); Saldanha Bay (Chilton).

Strauss (Wiss. Ergebn. D. Tiefsee Exp., vol. xx, pt. 1, p. 6, pl. i, figs. 1-4, pl. ii, fig. 12, 1909) has discussed the structure of the eye in *O. rossi* Wlkr.

Gen. URISTES Dana.

1849. *Uristes*. Dana, Amer. J. Sci., ser. 2, vol. viii, p. 136.

1916. ,, Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 126 (references).

Uristes induratus n. sp.

(Plate XXXIV, fig. 3.)

♂. Body moderately stout, integument indurated. Head as long as 1st pereaeon segment, antero-lateral angles acute. Eyes not distinguishable.

Pereaeon and pleon segments dorsally rounded. Side-plate 1 extremely small, subsemicircular, concealed by side-plate 2, which

itself is half concealed by 3, 3 considerably deeper than 2, 4 twice as deep as greatest length, postero-inferior angle subacute, emargination moderately deep, 5 as deep as long, subcircular with a very shallow indentation on inferior margin, 6 deeper than long, anterior margin straight, 7 considerably shallower, subsemicircular.

Postero-inferior angle of pleon segment 1 quadrate, of segment 2 quadrate with a small acute point, of 3 produced in a long acute slender point at least half the dorsal length of the segment.

Telson lanceolate, twice as long as basal width, cleft $\frac{2}{3}$ length, apices acute, contiguous.

First antenna, 2nd and 3rd joints together equal to 1st, flagellum 7-jointed, 1st joint long, setose, 6th and 7th elongate and very slender, accessory flagellum shorter than 1st flagellar joint, 2-jointed, both joints slender.

Second antenna not greatly longer than 1st, ultimate peduncular joint shorter than penultimate, flagellum 2-jointed.

Epistome and upper lip not projecting.

Mandible, molar well-developed, palp affixed over molar, short and stout, 2nd joint scarcely, if at all, longer than 3rd.

First maxilla, inner plate with 3 apical setae, outer plate with 8 denticulate spines, palp of the one side with 4 apical spinules, of the other side with 4 stout spines and a spinule.

Second maxilla, outer plate slightly wider than inner.

Maxilliped, inner plate with 3 stout spines on apex, outer plate with 5 or 6 close-set stout, blunt, more or less chisel-shaped spines on inner distal margin, 4th joint of palp not quite equal to 3rd.

First gnathopod, 2nd joint equal to rest of limb, 5th a little longer than 6th, subequal in width, palm oblique, spinose, 5th and 6th not very setose, finger matching palm.

Second gnathopod, 5th and 6th joints subequal in width, 5th considerably longer than 6th, which narrows distally, no palm, the infero-distal angle rounded, finger small.

First and second peraeopods slender, none of the joints expanded, 7th nearly as long as 6th.

Third peraeopod, 2nd joint much smaller than the side-plate, as broad as its anterior length, posteriorly expanded and produced in a distally rounded lobe reaching to middle of 4th joint, hind margin straight, entire, other joints slender.

Fourth peraeopod, 2nd joint twice as long anteriorly as wide, posterior lobe reaching only to end of 3rd, hind margin straight, entire, other joints slender.

Fifth peraeopod, 2nd joint of same proportions as in 4th peraeopod but considerably larger, posterior lobe reaching end of 3rd, hind margin convex, with only 3 widely spaced and very obscure and shallow indents, other joints slender.

First and second uropods slender, outer ramus distinctly shorter than inner.

Third uropod stouter, outer ramus (including 2nd joint) a little longer than inner, both rami narrow lanceolate.

Length.—7 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♂. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4548.)

In general appearance approximating to *U. unbonatus* (Sars), but with the 1st side-plate much smaller. Distinguished from all the species in the genus by the produced postero-inferior angle of pleon segment 3, the small 1st and large 5th side-plates, the 2nd joints of the 3rd–5th peraeopods, especially that of the 3rd, and the mandibular palp.

FAMILY AMPELISCIDAE.

Gen. AMPELISCA Kroyer.

1842. *Ampelisca*. Kroyer, Naturh. Tidsskr., vol. iv, p. 154.

1916. ,, Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 132
(references).

Ampelisca byblisoides n. sp.

(Plate XXXIV, fig. 4.)

Head equal to first two peraeon segments together, transversely truncate. Eyes apparently absent. Side-plate 1 concealing base of 2nd antenna, 1–3 without a tooth at postero-inferior angle, 4 as deep as long, postero-inferior angle rounded.

Posterior margin of pleon segment 4 raised dorsally into a kind of hood, but not projecting over 5th segment, margin setose. Postero-inferior angle of segment 3 rounded.

Telson nearly half as long again as broad, apices acute with 2–3 setules, dorsal surface with a very few setules on distal portion.

First antenna scarcely more than $\frac{1}{3}$ length of body, 2nd joint not twice length of 1st, 3rd shortest, flagellum 10-jointed.

Second antenna nearly as long as body, ultimate and penultimate peduncular joints subequal, flagellum ca. 26-jointed.

Mandible, 2nd joint of palp linear, longer than 3rd.

First gnathopod, 5th and 6th joints subequal, linear, palm of 6th a little oblique, with 6 short pectinate spine-setae.

Second gnathopod, 5th joint longer than 6th, otherwise similar to 1st gnathopod.

First and second peraeopods, 4th joint slightly expanded distally but scarcely produced, 6th $\frac{1}{2}$ as long again as 5th, 7th not equal to 5th plus 6th.

Third and fourth peraeopods, 2nd joint with hind margin evenly rounded, 3rd and 4th almost without setae, 5th with setae on anterior margin, 2 groups of 3 spinules on posterior margin, a row of 5 spines and 3 long setae on posterior apex, 6th subequal to 5th, 7th simple.

Fifth peraeopod, 2nd joint longer than rest of limb, widening to the transversely truncate distal margin, postero-inferior angle rounded, plumose setae on the distal margin, but none between its expansion and the 3rd joint, 4th wider than and half as long again as 3rd, 5th shorter than 4th but longer than 3rd, 6th scarcely half width of 5th, as long as 3rd, 7th minute, half as long as 6th.

Uropods 1 and 2, peduncle a little longer than rami.

Uropod 3, peduncle extending to apices of rami of uropod 2, rami equal, foliaceous, setose.

Length.—8 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 8 specimens, but no ovigerous ♀. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4529.)

This species merits attention on account of its showing a transition between *Ampelisca* and *Byblis*. The 5th peraeopod is of the *Byblis* type, with small 7th joint, but without setae on the 2nd joint between its expansion and the 3rd joint. The 3rd and 4th peraeopods have 2 groups and an apical row of spines on the posterior margin of the 5th joint; this is more than *Ampelisca* has, but, on the other hand, does not reach the strong development of several transverse rows found in *Byblis*.

Ampelisca excavata n. sp.

(Plate XXXIV, figs. 5-7.)

Head equal to first two peraeon segments together, transversely truncate. Eyes 3 on each side, the lower in the antero-lateral angle, the upper some distance within the anterior margin, the 3rd half the size of the other two, behind the upper, cornea not thickened.

Side-plate 1 concealing base of 2nd antenna, 1-3 not notched at postero-inferior angle, inferior margin of 1 but not of 2 and 3 strongly convex, postero-inferior angle of 4 rounded, depth of 4 twice length.

Postero-inferior angle of 3rd pleon segment rounded-quadrate. Pleon without any keels or teeth.

Telson oval, lobes narrow-ovate, apices separated, cleft scarcely extending beyond centre, 2-3 apical setae and 1 subapical on outer margin, none on dorsal surface.

First antenna, $\frac{1}{4}$ length of body, 1st and 2nd joints subequal but 2nd a trifle more slender, 3rd $\frac{1}{2}$ 2nd, flagellum subequal to peduncle, 8-jointed.

Second antenna only a little longer than 1st, 4th and 5th joints subequal, each equal to 2nd plus 3rd, flagellum a little shorter than peduncle, 8-jointed.

Mandible, 2nd joint of palp linear, 3rd $\frac{1}{2}$ 2nd.

Maxilliped, inner margin of outer plate with 7 stout spines, the distal 2 elongate and linear, the others ovate, outer distal angle of 4th joint of palp prominent.

First gnathopod, 6th a little shorter and narrower than 5th, both joints with plumose setae on inferior margin, 6th in addition with serrate spines.

Second gnathopod similar, but longer and more slender.

First and second peraeopods, 4th joint widening slightly distally but not apically produced, inferior apex with 3-4 stout plumose setae, 5th $\frac{1}{2}$ 6th, 7th equal to 5th and 6th together.

Third peraeopod, anterior margin of 2nd joint strongly bulging, 3rd thrice as wide as long, anterior margin of 4th very convex, 5th shorter than 4th, posterior apex produced, posterior margin with 2 pairs of very stout short spines with a single one proximal and another distal to them, apex with 1 stout spine and 2 stout serrulate setae, 6th equal to 5th, posterior margin with 1 spinule, 7th with a spinule on anterior margin.

Fourth peraeopod similar to 3rd, anterior distal margin of 2nd joint with 6 stout plumose setae, 5th joint as in 3rd peraeopod.

Fifth peraeopod, anterior margin of 2nd joint concave proximally, hind margin convex, expanded, distal hind margin semicircularly excavate, postero-inferior apex bilobed and reaching to middle of 5th joint, a few simple setae on hind margin, none between expansion and 3rd and 4th joints, 4th thrice as long as 3rd, 4 stout plumose setae on hind margin, 5th $\frac{1}{2}$ 4th with a short stout spine on hinder

apex, 6th a little longer than 5th, linear, 7th shorter than 5th, linear, apically blunt.

First uropod, peduncle stout, outer ramus subequal to peduncle, curved, inner ramus shorter and more slender than outer.

Second uropod stout, rami shorter than peduncle, outer a trifle longer than inner, apex bifid, upper margin with 3 stout short spines, inner ramus apically acute, with 1 spinule on upper margin.

Third uropod stout, outer ramus narrow lanceolate, apex acute, entire, a small subapical notch on inner margin, inner and outer margins distally with a few short setae, inner ramus longer than outer, stout, tapering to a bifid apex, a strong subapical tooth on inner margin, and a subapical tuft of short setae on outer margin.

Length.—7 mm.

Colour.—Whitish, both antennae and the ocular pigment crimson.

Locality.—Buffels Bay (False Bay), 1/3/15 (K.H.B.), 1 immature specimen. (S.A.M., No. A 3289.)

This species is remarkable for the stoutness of the 3rd and 4th peraeopods. The 5th peraeopod and the telson are also distinctive. Up to the present no further specimens have come to hand.

FAMILY HAUSTORIIDAE.

Gen. PLATYISCHNOPUS Stebb.

See 1916. Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 142.

Platyischnopus capensis n. sp.

(Plate XXXIV, figs. 13, 14.)

1914. *Platyischnopus mirabilis*. Stebbing, Ann. S. Afr. Mus., vol. xv, pt. 1, p. 32 (non-Stebbing, 1888).

1916. „ „ „ Barnard, *loc. cit.*, p. 142 (quotes Stebbing).

Since the publication of the last-mentioned paper, the discovery of a male specimen has led me to examine the Saldanha Bay specimen identified by Stebbing as *mirabilis*. I regret that I cannot accept this determination. The specimens agree far more closely with *P. herdmani* Wlkr., though there are features which in my opinion entitle them to be regarded as a new species.

Head equal to first 3 peraeon segments, resembling *mirabilis*. Eyes present. First 3 peraeon segments subequal, 4th–7th segments increasing in length.

Third pleon segment with 1 dorsal tooth flanked by 2 subdorsal teeth as in *herdmani*, but considerably smaller and easily overlooked. Postero-inferior angle of 2nd and 3rd segments acutely produced and upturned.

Telson similar to that of *mirabilis*, but narrower in proportion to its length, the apical notch also narrower, but the lobes still divergent, not contiguous as in *herdmani*, each lobe with a small tooth on outer margin from which arises a seta, 2 groups of setae on the dorsal surface.

First antenna in ♂ as described by Walker for *herdmani*, 1st joint swollen, twice as broad as long, 2nd twice as long as 3rd, which has a dense fringe of setae round the distal end, flagellum reaching to end of 1st uropods, very slender, 1st joint longest, accessory flagellum 3-jointed; in ♀ 2nd joint longer and stouter than 3rd, flagellum 5-jointed, with apical setae, accessory flagellum 2-jointed.

Second antenna more slender in ♂ than in ♀, but otherwise similar, 4th joint much the longest and stoutest, twice as long as 5th, more strongly setose than in *herdmani*, with an apical tuft of long setae, flagellum slender, 3-jointed.

First gnathopod, 3rd joint $\frac{1}{3}$ length of 2nd, 5th equal to 3rd plus 4th, 6th similar to that of *mirabilis*, but not so produced, similar in the two sexes but a little more slender in ♂ than ♀.

Second gnathopod, 3rd joint $\frac{1}{3}$ length of 2nd, 5th much longer than in 1st gnathopod, twice length of 3rd, 6th $\frac{1}{3}$ length of 5th, resembling that of *herdmani*, whole limb more slender in ♂ than ♀.

Peraeopods 1 and 2 similar to those of *herdmani*, 5th joint with apical tuft of setae, 6th with about 10 apical spine-setae, which are distinctly not so stout or so long as 7th joint.

Peraeopod 3 resembling that of *herdmani*, the 2nd joint not so stout as in *mirabilis*.

Peraeopod 4 as figured for *mirabilis*, but 2nd joint almost as broad as long.

Peraeopod 5, 2nd joint distinctly longer than broad, resembling that of *herdmani*, but with 3 teeth on distal hind angle in addition to the actual postero-inferior angle, which is also acute. It may be remarked that in Walker's figure the 3rd joint has been omitted; it is let into the 2nd, appearing at first sight to be part of this joint, and is consequently easily overlooked. Remaining joints as in *herdmani*.

First and second uropods slender, 1st longer than 2nd, 2-3 stout curved spines on distal upper margins of the peduncles, rami of both

slightly longer than their peduncles, the outer ramus of both being slightly longer than the inner. Similar in both sexes.

Third uropod in ♂ extending much beyond the other uropods, peduncle short, moderately stout, with long apical setae on lower margin, one ramus no longer than peduncle, ovate-lanceolate, apex acute, the other ramus nearly 4 times length of peduncle, narrow linear, with groups of short spines on outer margin and long plumose setae on inner margin, at the apex a long stout spine nearly $\frac{1}{2}$ length of ramus. In ♀ similar to ♂, but not so elongate, the long ramus with groups of short spines on *both* margins and no plumose setae.

With regard to the relative positions of these rami, Stebbing assumes that the *long* one is the *outer*, whereas Walker expects "the inner ramus to be long and easily detached as in the case of some of the *Gammaridae*." But in the *Gammaridae* it is the *outer* ramus which is the longer of the two, and such is also the case here. The two rami appear in profile to arise one above the other, the shorter one above; but when viewed from above the *shorter* one is distinctly seen to be the *inner*, and converging slightly towards its fellow.

Length.—6 mm. ; including 3rd uropods in ♂, 7.5 mm.

Colour.—In spirit, pale yellowish.

Locality.—Saldanha Bay, 10 fathoms, 1 ♀ (Stebbing); from stomach of White Stumpnose (*Chrysophrys globiceps*) caught in Table Bay, 1906, 1 ♂. (S.A.M., Nos. A 3895 and A 4389.)

As remarked, this species is close to *herdmani*, the chief distinction being in the telson. Both agree in having dorsal teeth on the 3rd pleon segment and in the shape of the 5th peraeopod, which features separate them sharply from *mirabilis*.

FAMILY PHOXOCEPHALIDAE.

Gen. HARPINIA Boeck.

1876. *Harpinia*. Boeck, Skand. Arkt. Amphip., vol. ii, p. 218.

1910. ,, Stebbing, Gen. Cat. S.A. Crust., p. 452
(references).

Harpinia excavata Chevr.

1887. *Harpinia excavata*. Chevreux, Bull. Soc. zool. Fr., vol. xii,
p. 568.

1908. ,, ,, Stebbing, S.A. Crust., pt. 4, p. 73
(references).

1910. ,, ,, *Id.*, *loc. cit.*, p. 452.

A female specimen agrees with Chevreux's figures, except that the hind margin of the 2nd joint of 5th pereopod is perfectly entire; a magnification of 450 diam. failed to disclose any crenulations.

The inner ramus of 3rd uropod is as long as the 2-jointed outer ramus, as noted by Stebbing.

Length.—4 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♀. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4522.)

Geogr. Distribution.—Bay of Biscay, 5110 metres, and off Cape Finisterre, 363-510 metres (Chevreux); off Cape Peninsula, 245 fathoms (Stebbing).

FAMILY AMPHILOCHIDAE.

Gen. CYPROIDEA Hasw.

1880. *Cyproidea*. Haswell, Ann. Mag. Nat. Hist., ser. 5, vol. v, p. 31.

1880. *Cyproidia* (part). *Id.*, Proc. Linn. Soc. N.S.W., vol. iv, p. 320.

1900. *Cyproidea*. Chilton, Ann. Mag. Nat. Hist., ser. 7, vol. v, p. 243.

1906. ,, Stebbing, Das Tierreich, 21, pp. 157, 723.

Cyproidea ornata (Hasw.).

1880. *Cyproidea* sp. (part). Haswell, *loc. cit.*, p. 31.

1880. *Cyproidia ornata*. *Id.*, *loc. cit.*, p. 320, pl. xviii, fig. 1.

1906. *Cyproidea* ,, Stebbing, *loc. cit.*, p. 158.

These specimens agree exactly with Stebbing's description in "Das Tierreich."

Length.—4 mm.

Colour.—In spirit, yellowish-white, tips of the antennae pink.

Locality.—Port Shepstone, Natal, September 1916 (H. C. Burnup), 16 specimens. (S.A.M., No. A 4191.)

Geogr. Distribution.—Australia.

Gen. GITANOPSIS G. O. Sars.

See 1916. Barnard, Ann. S.A. Mus., vol. xv, pt. 3, p. 144.

Gitanopsis pusilla Brnrd.

1916. *Gitanopsis pusilla*. Barnard, *loc. cit.*, p. 144, pl. xxvi, figs. 11, 12.

A single specimen from the " Pieter Faure " collection (Lion's Head, Cape Town, S.E. $\frac{1}{4}$ E., distant 50 miles, 230 fathoms, 2/4/02) is inseparable from the specimens originally described from littoral waters. The process of the 5th joint of the 2nd gnathopod is not quite so long. There is no trace of eyes, but this might well be due to the method of preservation. The telson is exactly similar.

As regards the bathymetrical range, it must be borne in mind that the " Pieter Faure " used no closing nets of any kind, so that the possibility of the present specimen having been taken in surface waters near floating weed is not excluded. Since, however, the specimen was found in a bottle of mixed Starfish, Hydroids, Gasteropods, etc., its deep-water origin is probable.

Chilton (1923, Rec. Austr. Mus., xiv, 2, p. 82) considers this species to be a synonym of *Amphilochus neapolitanus* Della Valle, a species found in Europe, Australasia, and India. As I have not had the same opportunities for comparison that Dr. Chilton has, I am not in a position to offer any further remarks on the question. The colour-pattern, however, appears to be different.

FAMILY LEUCOTHOIDAE.

Gen. LEUCOTHOE Leach.

See 1916. Barnard, Ann. S.A. Mus., vol. xv, pt. 3, p. 148.

1923. Chilton, Rec. Austr. Mus., vol. xiv, pt. 2, p. 85.

Leucothoe ctenochir n. sp.

(Plate XXXIV, fig. 8.)

Antero-lateral angles of head rounded. Eyes moderately large, oval. Side-plate 1 scarcely widened below, 2 oblong, longer than deep, antero- and postero-inferior angles of both 1 and 2 quadrate, 3 slightly deeper than 1 and 2, about as deep as long, angles rounded-quadrated, 4 deeper than long, deepest at rounded anterior angle, posterior emargination very shallow.

Postero-inferior angles of pleon segments 2 and 3 sub-quadrated, 3rd without sinus.

Telson ovoid, only half as long again as broad, and only half as long as total length of 3rd uropod, apex broadly rounded.

First antenna reaching end of 3rd peraeon segment, moderately stout, 1st and 2nd joints subequal in length, but 1st stouter than 2nd, 3rd $\frac{1}{4}$ 2nd, flagellum equal to 2nd, 8-jointed, accessory flagellum indistinguishable.

Second antenna subequal to 1st, ultimate peduncular joint shorter than penultimate, slender, flagellum scarcely half length of last peduncular joint, 3-jointed.

Mandibular palp moderately long, slender, 3rd joint longer than 1st, but shorter than 2nd.

First gnathopod, 2nd joint stout, thrice as long as broad, 5th circular at the base, from which arises the very slender process, curving gently downwards and then turned sharply up at the extreme apex, inner margin smooth, 6th ovoid and stout at the base, narrowing into the slender distal portion, inner margin smooth, 7th scarcely $\frac{1}{6}$ length of 6th, slender, curved.

Second gnathopod, 2nd joint stout as in 1st gnathopod, anterior apical angle slightly lobed, rounded, 3rd rather more prominently lobed on anterior margin, 5th produced in a narrow subulate process, apically acute, 6th ovate, palm longer than hind margin, with 6 strong and regular narrow teeth (including the one at the defining angle) resembling a comb, the tooth nearest the finger-hinge obscurely bifid at the apex, finger matching palm, slender, evenly curved.

Peraeopods not very slender, very feebly armed with spines.

First, 2nd, and 3rd uropods also nearly spineless, 3rd uropods extending beyond the 1st and 2nd pairs.

Length.—6.5 mm.

Colour.—In spirit, yellowish, eyes dark red-brown.

Locality.—Port Shepstone, N. distant 8 miles, 36 fathoms, 1 specimen. S.S. "Pieter Faure," 14/3/01. (S.A.M., No. A 4404.)

This species is easily distinguished by the beautiful comb-like armature of the palm of the 2nd gnathopod.

Leucothoe dolichoceras Brnrd.

1916. *Leucothoe dolichoceras*. Barnard, Ann. S.A. Mus., vol. xv, pt. 3, p. 151, pl. xxvi, fig. 14.

The discovery of further specimens in the "Pieter Faure" collection enables me to confirm the original description, and to make one or two additions thereto.

The better preserved specimens show well-developed eyes, moderate in size, ovoid, and black in colour. In some of the specimens, however, the eyes are only slightly darker than the rest of the animal: a difference which is probably due to the method of preservation, although "3 per cent. formalin" is given in the record book as the fluid used in all cases.

The 3rd uropods, like the 1st and 2nd pairs, are almost spineless.

In adult specimens there is a characteristic bend or kink in the 5th joint of the 1st gnathopod, the distal process curving downwards away from the axis of the basal portion.

A series of specimens of all ages shows that up to about 5-6 mm. in total length the palm of the 2nd gnathopod is practically smooth. At this size slight denticles begin to appear, chiefly visible near the finger-hinge. At about 8-10 mm. there are 3 clearly defined, flat-topped denticles, the one nearest the finger-hinge being bifid. After this the adult form is rapidly assumed, the hand becoming narrower and the palmar denticles stronger.

Additional Localities.—Umkomaas River mouth, N.W. by W. $\frac{1}{2}$ W., distant 5 miles, 40 fathoms, 3 specimens; False Bay, 11-13 fathoms, 3 lots of several specimens. S.S. "Pieter Faure," 31/12/00, 24/8/03, and 19/11/03. (S.A.M., Nos. A 4409-A 4412.)

Lives in the "Cauliflower" Alcyonarian *Capsella rugosa* Kükenth.

FAMILY STENOTHOIDAE.

Gen. STENOTHOE Dana.

- See 1916. Barnard, Ann. S.A. Mus., vol. xv, pt. 3, p. 153.
 1923. Chilton, Rec. Austr. Mus., vol. xiv, pt. 2, p. 95 (discussion of *S. valida* Dana and synonyms).
 1924. *Id.*, Tr. N.Z. Inst., vol. lv, p. 270.

Stenothoe gallensis Wlkr.

1904. *Stenothoe gallensis*. Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep., 17, p. 261, pl. iii, fig. 19.
 1916. ,, ,, Barnard, *loc. cit.*, p. 154.

The identification of the Durban specimens, which rested on female specimens only, is now confirmed by a male forwarded to me by Mr. H. C. Burnup.

The shape of the 2nd joint of the ramus of the 3rd uropod is quite distinctive, although in the present specimen it is not the same as in Walker's figure, but corresponds exactly with Kunkel's figure (Tr. Conn. Ac. Sci., vol. xvi, p. 17, fig. 5) of the same appendage in a Bermudan specimen of *S. valida* Dana.

The line of demarcation between the distal joint and its "blunt projection" shown in Kunkel's figure is here absent. Kunkel had a ♂ and a ♀ under examination, and, for aught he says to the contrary,

the ♀ shows the same peculiarity in the 3rd uropod as the ♂. This peculiar shape seems to be abnormal, to judge from Stebbing's description in "Das Tierreich." I have not seen Dana's figures, but if his figure had shown a suddenly constricted 2nd joint, Stebbing would hardly have described it merely as "longer than 1st."

It is therefore interesting to find the same peculiarity in the South African specimen, and at first it seemed that the specimen must be assigned to *valida*. But a glance at the 2nd joint of the 3rd pereopod at once showed that this joint was narrow linear as in *gallensis*, instead of broadly oval as in *valida*. The specimen therefore must be regarded as belonging to *gallensis*, with the 3rd uropod abnormal, *i.e.* different from that originally described by Walker. The need of very much more abundant material is here only too patent.

Another question which also awaits solution is whether *gallensis* should not become a synonym of the Mediterranean species *cattai* Stebb., 1906, which has a *geniculate* 2nd joint to the ramus of the 3rd uropod, and a 2nd gnathopod similar to *valida* and *gallensis*.

Length.—♂ 4 mm.

Colour.—In spirit, white, eyes distinct.

Locality.—Port Shepstone, Natal, September 1916 (H. C. Burnup), 1 ♂. (S.A.M., No. A 4194.)

Stenothoe assimilis Chevr.

1908. *Stenothoe assimilis*. Chevreux, Bull. Inst. océan. Monaco, No. 113, p. 4, figs. 4-6.

A male specimen agreeing with the description and figures, except in having the inferior margin of side-plate 2 scarcely concave, and the flagella of the antennae longer: that of antenna 1 being ca. 24-jointed, that of antenna 2 ca. 18-jointed.

This species is distinguished from the preceding by the entire (not crenulate) inferior margin of the 4th joint of gnathopod 2 in ♂, the less developed gnathopod 2 in ♀, the more quadrangular shape of side-plate 2, and the straight conical 2nd joint of the ramus of uropod 3.

Length.—5 mm.

Colour.—Ivory-white, semitransparent, with pink spots on back and at base of side-plates, eyes crimson.

Locality.—Durban Harbour, 5 fathoms (H. W. Bell-Marley), 1 ♂, 1/5/17; Cape Town Harbour, on floating boom (R. W. E. Tucker), 3 ♂♂, 2 ovigerous ♀♀, 1 juv., April 1918. (S.A.M., Nos. A 4579 and A 5882.)

Geogr. Distribution.—Monaco, Mediterranean.

This species is considered by Chilton (1923, *loc. cit.*, *supra*, p. 99) as a synonym of *S. valida* Dana.

FAMILY COLOMASTIGIDAE.

1899. *Colomastidae*. Chevreux, C.R. Ass. franc. Sess., 27, vol. ii, p. 483.
 1899. *Colomastigidae*. Stebbing, Ann. Mag. Nat. Hist., ser. 7, vol. iv, p. 211.
 1906. ,, *Id.*, Das Tierreich, 21, p. 206.
 1910. *Colomastixidae*. Chevreux, Mem. Soc. zool. Fr., vol. xxiii, p. 202.

Gen. COLOMASTIX Grube.

1861. *Colomastix*. Grube, Ausfl. Triest., p. 137.
 1862. *Cratippus*. Bate, Cat. Amph. Brit. Mus., p. 275.
 1869. *Exunguia*. Norman, in Brady and Robertson, Ann. Mag. Nat. Hist., ser. 4, vol. iii, p. 359.
 1893. *Colomastix*. Della Valle, F. u. Fl. Neapel, vol. xx, p. 854.
 1906. ,, Stebbing, *loc. cit.*, p. 206.
 1912. ,, Chilton, Tr. Roy. Soc. Edin., vol. xlvi, pt. 2, p. 484.

Colomastix pusilla Grube.

1861. *Colomastix pusilla*. Grube, *loc. cit.*, p. 137.
 1864. ,, ,, *Id.*, Arch. Naturg., vol. xxx, p. 206, pl. v, figs. 2, 2a-b.
 1893. ,, ,, Della Valle, *loc. cit.*, p. 854, pl. vi, fig. 2, pl. lxi, figs. 23-37.
 1906. ,, ,, Stebbing, *loc. cit.*, p. 207 (references).
 1907. ,, ,, Walker, Nat. Ant. Exp., vol. iii, p. 38.
 1909. ,, *crassimanus*. *Id.*, Tr. Linn. Soc. Lond., vol. xii, p. 332.
 1910. ,, *pusilla*. Chevreux, *loc. cit.*, p. 202.
 1910. ,, ,, Kunkel, Tr. Conn. Ac. Sci., vol. xvi, p. 21, fig. 7.
 1912. ,, ,, Pearse, Pr. U.S. Nat. Mus., vol. xliii, p. 370, fig. 2.

Eyes rather large, consisting of 18-21 ommatidia. Serrulations on antenna 2 very obscure. Mouth-parts as in Della Valle's figures.

Gnathopod 1 in ♂ atrophied, as in Della Valle's figure. Uropod 3 with rami subequal, or the outer very slightly longer; serrations on the rami of all the uropods extremely obscure. Telson suboval, apically rounded.

Length.—4 mm.

Colour.—In spirit, yellowish, eyes of same colour (A 4550), or red (A 4551).

Locality.—Between Roman Rock and Cape Recife, 17 fathoms, 2 ♂♂, 2 ovigerous ♀♀, 3 juv. in sponges; Cape Point, N.E. $\frac{1}{4}$ N., distant 18 miles, 135 fathoms, 1 ♀ in a sponge. S.S. "Pieter Faure," 12/12/98 and 27/2/02. (S.A.M., Nos. A 4550 and A 4551.)

Geogr. Distribution.—France, Great Britain, Mediterranean, 12–75 metres (Stebbing, Chevreux, etc.); Red Sea (Walker); Bermuda (Kunkel); Gulf of Mexico, 25–27 fathoms (Pearse); McMurdo Sound, Antarctic (Walker).

It is probable that *C. brazieri* Hasw. from Port Jackson (Haswell), Otago, New Zealand (Chilton), and the South Orkneys (Chilton) will eventually be united with *pusilla*.

FAMILY 'PARDALISCIDAE.

Gen. HALICE Boeck.

1871. *Halice*. Boeck, Forh. Selsk. Christian., 1870, p. 152.
1893. ,, G. O. Sars, Crust. Norw., vol. i, p. 411.
1893. ,, Della Valle, F. u. Fl. Neapel, vol. xx, p. 661.
1906. ,, Stebbing, Das Tierreich, 21, p. 228.
1912. ,, Chevreux, Bull. Inst. océan. Monaco, No. 233, p. 1.

Halice anacantha n. sp.

(Plate XXXIV, fig. 12.)

Body moderately stout. Rostrum small. Eyes absent. Peraeon and pleon without any dorsal teeth. Side-plate 1 with acute antero-inferior angle, the other side-plates rather deeper than in *H. abyssi* Boeck. Postero-inferior angle of pleon segment 3 subquadrate.

Telson twice as long as broad, cleft nearly to base, lobes rather stout, not strongly dehiscent, apices bifid.

First and second antennae as in *H. abyssi*, accessory flagellum of 1st antenna in ♂ with enlarged basal joint.

Mandible, trunk normal, palp slender, 3rd joint almost as long as 2nd, ending in a long seta.

The other mouth-parts as figured by Sars for *abyssi*.

First gnathopod as in *abyssi*, but 5th and 6th joints less setose on lower margin.

Second gnathopod, 5th joint subequal to 6th, both densely setose.

First and second peraeopods stout, more so in female than in male, 2nd joint elongate ovate, 4th subtriangular, wider than 2nd, 5th in ♂ not quite as long or as wide as 4th, in ♀ larger than 4th, 6th abruptly narrower, slender, longer than 4th, hind margins of 4th-6th with plumose setae.

Peraeopods 3-5 as in *abyssi*.

Uropods 1 and 2 normal; uropod 3 apparently also normal, but more or less mutilated in all the specimens.

Length.—5-6 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 3 ♂♂, 4 ♀♀. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4525.)

This species is easily distinguished from *H. abyssi* and *aculeata* Chevr. by the absence of teeth on the pleon and the stout 1st and 2nd peraeopods. The mandibular palp is more like that of *Pardaliscopsis tenuipalpa* Chevr., 1911, than that of any of the other members of the family; it is quite unlike that of *H. abyssi*—but then that of *H. aculeata* shows the transition between a very short and an elongate 3rd joint.

It might be thought that in consequence of the elongate 3rd palpal joint of the mandible the species should be placed in *Pardaliscella* Sars; but all the other characters point to its relation with *Halice*, although it is to be regretted that the 3rd uropods are not better preserved.

FAMILY OEDICEROTIDAE.

Gen. OEDICEROIDES Stebb.

1888. *Oediceroides*. Stebbing, Challeng. Rep., vol. xxix, p. 843.

1916. ,, Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3,
p. 162 (references).

Oediceroides plumicornis n. sp.

Body compressed, slender. Rostrum slender, acute, slightly deflexed, extending to end of 1st joint of 1st antenna. Ocular pigment forming an obscure median longitudinal stripe on base of rostrum. Antero-lateral angles of head subacute. Peraeon dorsally smooth. Side-plate 1 produced forwards, 4 moderately excavate

behind. Pleon segment 3 rather tumid dorsally above the base of the 4th segment, postero-inferior angle rounded, setose.

Telson oval, 2-3 setules on the broadly rounded apex.

First antenna half length of 2nd, 2nd joint barely as long as 1st, more slender, with numerous long plumose setae on upper margin, 3rd scarcely $\frac{1}{2}$ 2nd, flagellum not as long as peduncle, ca. 12-jointed.

Second antenna, penultimate peduncular joint stout, widest at base, thence tapering evenly, ultimate joint distinctly more slender, $\frac{2}{3}$ length of penultimate, flagellum equal to last 2 peduncular joints together, multiarticulate, with calceoli on anterior margin.

Mandible similar to that of *O. cinderella* Stebb.

First gnathopod, 5th joint not as broad as 6th, which is somewhat similar to that of *O. rostratus* (Stebb.), but with a little longer hind margin, palm minutely, but very distinctly, pectinate (cf. *O. proximus* Bonn., but the denticles are more acute).

Second gnathopod, 5th joint a little wider than 6th, which is more elongate than in 1st gnathopod, palm defined by 3 spines, pectinate as in 1st gnathopod.

All the paeopods slender; 2nd joint of 5th paeopod pyriform.

Uropods 1 and 2, peduncle longer than the subequal rami.

Uropod 3 shorter than the preceding, but in all the specimens either lost or damaged.

Length.—7-8 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, ♂♂ and ♀♀, some ovigerous. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4521.)

Closely allied to *O. proximus* Bonn., but lacking the ornamentation on the 1st-3rd pleon segments and differing in the shape of the 6th joint of 1st paeopod. Distinguished from all the species by the plumose 1st antenna.

The preservation of the specimens is not all that could be desired. In stained preparations the ocular pigment seems to extend to the apex of the rostrum, though in very limited amount. Attempts at further elucidation of this point by means of microtome sections were not successful.

Gen. ACEROIDES G. O. Sars.

1892. *Aceroides*. G. O. Sars, Crust. Norw., vol. i, p. 340 (*Aceropsis* on plate 120, sed non Stuxberg).

1906. ,, Stebbing, Das Tierreich, 21, p. 254.

The following species does not quite fit in with Stebbing's diagnosis, thus: the lower lip resembles that of *Perioculodes*, the inner plate of 1st maxilla has 6 setae instead of 1, as figured by Sars for *A. latipes* (*loc. cit.*, pl. cxx), the antennae have much longer peduncles, and side-plate 1 is different in shape.

But as there are already 10 monotypic genera, out of a total of 20, in the family, it does not seem advisable to multiply the number still more for the reception of the present species.

The characters of *Arrhinopsis* Stappers, 1911, are unknown to me.

Aceroides limicola n. sp.

(Plate XXXIV, figs. 9, 10.)

Body moderately tumid. Head with a distinct though very small rostral projection, not extending as far forward as the subtruncate lateral angles. Eyes absent. Peraeon and pleon smooth. Side-plates rather deep, inferior margins crenulate and setose, 1 expanded below, 2-4 increasing in size, inferior margin of 3 and 4 emarginate, lobes of 5 subequal, posterior lobe of 6 larger than the anterior.

Telson oblong, very slightly longer than broad, postero-lateral angles rounded, distal margin very slightly emarginate.

First antenna about $\frac{1}{3}$ total length, 1st joint considerably thicker than the following, 2nd joint longest, 3rd shortest, flagellum subequal to 1st peduncular joint, ca. 17-jointed, no accessory flagellum.

Second antenna subequal to 1st, 4th and 5th joints subequal, flagellum slightly longer than ultimate peduncular joint, ca. 7-jointed. Calceoli not developed on either antenna.

Upper lip broader than long, distal margin feebly convex.

Lower lip, inner lobes completely coalesced.

Mandibles closely resembling Stebbing's figures of those of *Oediceroides rostratus* (Challeng. Rep., vol. xxix, pl. lx), molar well developed, palp elongate, slender, 2nd joint straight, 3rd equal to 2nd.

First maxilla, inner plate with 5-6 plumose setae on inner distal margin, outer plate with 8 spines.

Maxilliped, inner plate scarcely reaching more than half-way along 1st joint of palp, outer plate reaching $\frac{3}{4}$ along 2nd palpal joint.

First gnathopod, 4th joint produced in a conical, apically subacute process nearly as long as that on the 5th joint, which reaches the defining angle of palm, 6th widest across the middle, palm oblique, subequal to hind margin, convex, minutely and irregularly denticulate, a submarginal row of spines with a stronger one at the defining angle, finger just overlapping palm.

Second gnathopod, 4th joint ending in a short conical point, not so produced as in 1st gnathopod, and not nearly so long as process of 5th joint, which reaches defining angle of palm, 6th more elongate than in 1st gnathopod, with the palm distinctly shorter than hind margin, but otherwise similar.

Peraeopods 1 and 2 stout, 2nd joint $2\frac{1}{2}$ times as long as broad, 4th–6th distally expanded as in *A. latipes*, but 7th abruptly narrower than 6th, unguiform, not expanded, shorter than 6th, 4th–6th strongly armed with spine-setae.

Peraeopods 3 and 4 also stout, 2nd joint ovate, scarcely twice as long as broad, anterior margin with dense fringe of simple setae, posterior margin crenulate, with plumose setae, 4th equal to 2nd, distally expanded, 5th not half as long as 4th, also expanded, but not as broad as 4th, 4th and 5th strongly armed with spine-setae, 6th considerably longer than 5th, but not equal to 4th, abruptly narrower than 5th, linear, gently curved, anterior margin with small spinules at regular intervals, posterior margin with 2–3 groups of setae, 7th about $\frac{1}{4}$ length of 6th, stout.

Peraeopod 5 as usual in the family, 2nd joint widest at base, postero-basal angle rounded, 5th and 6th subequal, slightly shorter than 4th, 7th lost.

Uropods 1 and 2, rami subequal, slightly shorter than peduncle.

Uropod 3 not extending beyond the others, rami subequal, longer than peduncle.

Length.—15 mm.

Colour.—In spirit, dull pinkish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♂. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4419.)

The particular features of this species are: the expansion of the 2nd, 4th, and 5th joints, and the narrowness of the 6th joint of the 3rd and 4th peraeopods; the production of the 4th joint of the 1st and 2nd gnathopods into a pointed process, nearly as long as that of the 5th joint in the 1st gnathopod, though considerably shorter in the 2nd.

Gen. PERIOCULODES Sars.

1892. *Perioculodes*. G. O. Sars, Crust. Norw., vol. i, p. 312.
1904. ,, Walker in Herdman's Ceylon Pearl Fish.
Suppl. Rep., 17, p. 262.
1906. ,, Stebbing, Das Tierreich, 21, pp. 237, 726.

Perioculodes longimanus (Bate and Westw.).

1868. *Monoculodes longimanus*. Bate and Westwood, Brit. Sess. Crust., vol. ii, p. 507.
 1892. *Perioculodes* ,, Sars, *loc. cit.*, p. 313, pl. cx, fig. 2, pl. cxi, fig. 1.
 1893. *Oediceros* ,, (part). Della Valle, F. u. Fl. Neapel, vol. xx, p. 547, pl. iv, fig. 9; pl. xxxiii, figs. 32-36.
 1906. *Perioculodes* ,, Stebbing, *loc. cit.*, p. 237, fig. 61.
 1910. ,, ,, Chevreux, Mem. Soc. Zool. Fr., vol. xxiii, p. 205.

Agreeing with the description and figures, except that there is no trace of eye pigment or lenses, and the processes of the 5th joint in gnathopods 1 and 2 are not quite so slender as in Sars' figures.

A curious feature is that both the 3rd uropods appear to consist of a short peduncle only, which tapers to a blunt apex at the level of the telsonic apex. They have evidently not been mutilated in the course of capture. They are probably in process of regeneration. If this degenerate or simple form of uropod were the normal, the case would be unique in the family. As there is only the one specimen, there is no other course but to identify it with *P. longimanus*.

Length.—5 mm.

Colour.—In spirit, dull pinkish.

Locality.—Duminy Point (off Saldanha Bay), E. by N. $\frac{1}{2}$ N., distant 8 miles, 87 fathoms, 1 ♂. S.S. "Pieter Faure," 17/3/02. (S.A.M., No. A 5971.)

Geogr. Distribution.—North Atlantic, Mediterranean. Closely allied species (*P. megapleon* Giles, and *P. serra* Walker) in the Indian Ocean.

Gen. SYNHELIDIUM Sars.

1892. *Synchelidium*. G. O. Sars, Crust. Norw., vol. i, p. 317.
 1906. ,, Stebbing, Das Tierreich, 21, p. 241.

Synchelidium (? *tenuimanum* Norm.).

See Stebbing, *loc. cit.*, p. 243.

As there is only a single specimen, and the species of this genus are so closely allied, it seems preferable not to identify the specimen definitely.

One distinguishing character is the presence in two of the species

of brown blotches, which Sars says are retained even after a long while in spirit (*loc. cit.*, p. 319). As a general rule it is to be noted that colours are exceedingly fleeting in spirit, so that little importance can be attached to this point.

The present specimen, after several years' preservation, is perfectly pellucid. As far as structural characters are concerned it appears to agree best with *tenuimanum* Norman, 1895, having the very slender 6th joint of the second gnathopod found in this species.

Length.—4 mm.

Colour.—In spirit, pellucid, pale pinkish.

Locality.—Vasco da Gama (Cape Peninsula), N. 40° E., distant 13 miles, 120 fathoms, 1 specimen. S.S. "Pieter Faure," 4/5/00. (S.A.M., No. A 5970.)

Geogr. Distribution.—The genus has been recorded from the North Atlantic, Mediterranean, and Ceylon.

FAMILY TIRONIDAE.

Gen. SYRRHOITES G. O. Sars.

1893. *Syrrhoites*. G. O. Sars, Crust. Norw., vol. i, p. 391.

1906. ,, Stebbing, Das Tierreich, 21, p. 279.

Syrrhoites tenellus n. sp.

Body slender, deeper in ♀ than in ♂. Rostrum extending nearly to the end of 1st joint of 1st antenna, only slightly deflexed. In ♂ peraeon segments 6 and 7 and pleon segments 1–4 carinate, but not strongly, the posterior angles quadrate but not produced into upturned teeth; in ♀ similar, but keels a little stronger, and a small very slightly upturned tooth on pleon segment 6. Side-plate 3 scarcely widened below, 4th less deep, subacute below. Postero-inferior angle of pleon segment 1 rounded, of segments 2 and 3 quadrate, with a small shortly produced point, not upturned, margin above entire. Posterior margin of 6th segment not fimbriate.

Telson elongate, cleft to the centre, apices acute.

First antenna, 1st and 2nd joints subequal, 3rd shorter, flagellum 7-jointed, 1st joint much longer than the other 6, subequal to peduncle, densely setose on front margin, accessory flagellum $\frac{2}{3}$ length of 1st flagellar joint, 2-jointed.

Second antenna lost.

Mandible stout, cutting-edge obtuse, 3rd joint of palp subequal to 1st and $\frac{1}{2}$ length of 2nd, tipped with 2 setae.

Maxilliped, outer plate with 9 stout, obtuse spines on inner margin.

First and second gnathopods similar to those of *S. serratus* (G. O. Sars).

Peraeopods 1-5 as in *S. walkeri* Bonn.

Uropods 1-3 as in *serratus*.

Length.—4 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♂, 1 ovigerous ♀. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4526.)

Distinguished from the other species by the dorsal carination and postero-inferior angle of 3rd pleon segment.

AUSTROSYRRHOE n. g.

Like *Syrrhoe* Goës, but body dorsally carinate, gnathopod 1 stout, more robust than gnathopod 2, with the 5th joint broad, both gnathopods simple, side-plate 1 widened below and side-plate 4 almost as deep as 3.

Austrosyrrhoe crassipes n. sp.

(Plate XXXIV, fig. 11.)

♂. Body slender. Rostrum reaching nearly to end of 1st joint of 1st antenna, slightly deflexed. Eyes absent. Peraeon segments 5-7 slightly keeled, the keel on segment 7 with a quadrate, but not denticiform posterior angle. Side-plate 1 widened below, produced forwards subacutely, 3 widened below, antero-inferior angle acute, postero-inferior angle rounded, 4 nearly as deep as 3, rounded below. Pleon segments 1-4 slightly keeled, the keel on segments 1-3 ending in a short backwardly directed tooth, on 4 ending in a long slender spini-form tooth lying close to the dorsal surface of segment 5.

Telson elongate, cleft not quite half-way, apices acute.

First antenna, 1st and 2nd joints subequal, the upper apex of 2nd produced into a tooth, 3rd short, flagellum ca. 9-jointed, 1st longer than all the rest and subequal to the peduncle, strongly setose on anterior margin, accessory flagellum $\frac{2}{3}$ length of 1st flagellar joint, 2-jointed, the 1st long.

Second antenna longer than 1st, ultimate peduncular joint longer than penultimate, flagellum ca. 10-jointed.

Mouth-parts as figured by Sars for *Syrrhoe* (Crust. Norw., vol. i, pl. cxxxvi).

First gnathopod stout, 2nd joint 4 times as long as broad, distal anterior margin setose, 3rd and 4th nearly as wide as 2nd, 5th oval, twice as wide as 4th, inferior margin with ca. 12 pectinate spines, 6th $\frac{1}{2}$ width and length of 5th, inferior margin setulose distally, with a stout pectinate spine in the middle, 7th shorter than 6th, with denticle on inner margin.

Second gnathopod about equal to 1st in length, but much more slender, closely resembling that of *Bruzelia typica* Boeck, 5th joint subequal to 2nd, longer than 6th, which is setulose on distal inner margin, with a pectinate spine just proximal to the setules.

Peraeopods 1 and 2 slender.

Peraeopods 3-5 slender, 2nd joint oval, hind margin entire.

Uropods 1-3 as in *Syrrhoe crenulata* Goës.

Length.—4 mm.

Colour.—In spirit, whitish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♂. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4527.)

The character of the first gnathopod is quite unique in the family.

Gen. LEPECHINELLA Stebb.

1908. *Lepechinella*. Stebbing, J. Linn. Soc. Lond. Zool., vol. xxx, No. 198, p. 191.

1914. *Dorbanella*. Chevreux, Bull. Inst. océan. Monaco, No. 296, p. 1.

1924. ,, Schellenberg, Mitt. Zool. Mus. Berlin, xi, 2, p. 205.

The fact that Stebbing placed his genus in the family *Paramphithoidae*, whereas Chevreux assigned his to the *Tironidae*, may account for the latter author overlooking Stebbing's genus, in spite of the highly characteristic dorsal processes.

The two forms clearly belong to the same genus, as may be seen by a comparison of the descriptions and figures of the mouth-parts, peraeopods, telson, and dorsal processes.

Stebbing's diagnosis holds good. Chevreux states that in *echinata* the "2nd and 3rd urosome segments" (pleon segments 5 and 6) are fused together, but this is not the case in *chrysotheras*.

Specifically, however, the two forms are easily distinguishable.

Chrysotheras Stebb. has no spines on the head besides the rostrum, a bifid 1st side-plate and a distinct palm on the 6th joint of the 1st and 2nd gnathopods; *echinata* (Chevr.), on the other hand, has an "interantennal tooth" on either side of the rostrum, the 1st side-plate with only a single pointed lobe, and scarcely any palm in the gnathopods. There are also differences in the length of the dorsal spines and the shape of the telson.

It is more difficult to decide in what family the genus should be ranged. Stebbing's decision would be quite satisfactory were it not for the presence of the well-defined inner lobes in the lower lip. For this reason it seems impossible to avoid placing the genus in the *Tironidae*. The two small deviations from the typical *Tironid* mouth-parts mentioned by Chevreux separate the genus equally from the *Paramphithoidae*. Perhaps later on a fusion of these two families may be thought desirable. Schellenberg places the genus in the neighbourhood of the *Atylidae*.

Up to the present *echinata* has only been found in the Gulf of Gascony, 46° 17' N., 5° 42' W., 4380 metres (Chevreux).

Lepechinella chrysotheras Stebb.

1908. *Lepechinella chrysotheras*. Stebbing, *loc. cit.*, p. 192, pl. xxvii.

Stebbing apparently had only the single specimen, and that was an immature one, 5-6 mm. long.

The present specimens agree with the original description and figures, except in the following details: posterior lobe of side-plates 3-6 less strongly developed, or even nearly obsolete, never acute, posterior angle of side-plate 7 also scarcely acute; postero-inferior angles of pleon segments 1-3 not always so acute or so much up-turned; telson slightly longer proportionately to its breadth than in Stebbing's figure, the lateral margins straight, with 3-6 setae; peduncle of 1st uropod with a strong spine on lower apex, as described by Chevreux in *echinata*, both rami with a row of regularly spaced spinules on inner margin.

The lower lip has well-developed inner lobes, which are, however, closely united nearly to their apices.

These characters are found in both sexes. There are, however, other characters which show sexual differences, namely, the 2nd antenna and 3rd uropod. In the ♀ these appendages resemble the young as figured by Stebbing. In the ♂ the 2nd antenna has a series of closely set tufts of short setules along the whole *upper* margin of

the 4th peduncular joint. The upper apex of the 3rd joint has a similar tuft.

The 3rd uropod, which in the ♀ scarcely exceeds the 2nd uropod, is considerably longer in the ♂, reaching as far back as the 1st uropod; the rami subequal or the outer a trifle longer than the inner, both margins of both rami fringed with rather long plumose setae.

Length.—8 mm.

Colour.—In spirit, yellowish-white.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms. Several ♂♂, ovigerous ♀♀, and juv. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4421.)

Geogr. Distribution.—59° 41' N., 3° W., 850 metres (Stebbing).

FAMILY EUSIRIDAE.

Gen. EUSIRUS Kröyer.

1845. *Eusirus*. Kröyer, Naturh. Tidsskr., ser. 2, vol. i, pp. 501, 511.
1888. ,, Stebbing, Challeng. Rep., vol. xxix, p. 964.
1893. ,, G. O. Sars, Crust. Norw., vol. i, p. 415.
1906. ,, Stebbing, Das Tierreich, 21, pp. 338, 729.
1907. ,, Walker, Nat. Ant. Exp., vol. iii, p. 30.
1907. ,, Chevreux, Exp. Ant. Franc., p. 49.
1911. ,, *Id.*, Ann. Mus. Nac. Buenos Aires, ser. 3, vol. xiv, p. 405.
1912. ,, Stephensen, Nath. Medd., vol. lxiv, p. 94.
1912. ,, Chilton, Tr. Roy. Soc. Edin., vol. xlviii, pt. 2, p. 489.
1913. ,, Chevreux, 2me. Exp. Ant. Franc., p. 163.

Eusirus minutus G. O. Sars.

1893. *Eusirus minutus*. G. O. Sars, *loc. cit.*, p. 419, pl. cxlvii, fig. 2.
1906. ,, ,, Stebbing, *loc. cit.*, p. 342.

Seven typical specimens calling for no remark.

Length.—5 mm.

Colour.—In spirit, pale pinkish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ♂, 6 ♀♀. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4422.)

Geogr. Distribution.—Coast of Norway, 400 fathoms (Sars).

FAMILY GAMMARIDAE.

Gen. ELASMOPUS Costa.

Elasmopus spinimanus Wlkr.

1905. *Elasmopus spinimanus*. Walker, in Herdman's Ceylon Pearl Fish. Suppl. Rep., 17, p. 277, pl. v, fig. 36.

These specimens are very much larger than Walker's, and evidently represent the adult form. In general they agree with Walker's description.

Pleon segment 4 dorsally with a low rounded median longitudinal keel. The postero-inferior angle of pleon segment 3 has a minute acute point in the ♂, but this is obsolete in the ♀.

Telson with 3 spines in the apical notch of each lobe.

Accessory flagellum of 1st antenna 3-jointed.

First gnathopod in ♂, as described by Walker, but 6th joint not longer than 5th, upper margin of 5th and 6th with long setae, lower margin of 5th densely setose but the setae shorter; in ♀ similar, but without long setae on upper margin of 5th joint.

Second gnathopod in ♂, 6th joint of the same general shape as described by Walker, but the spinigerous tubercle at the finger-hinge is stronger than in his figures, being better described as a rounded lobe, the spines also are stronger, there are no spines posterior to the lobe, the whole lower margin as well as the inner surface of the hand being densely clothed with long minutely pectinate setae as in *E. brasiliensis* or *pectenicrus*: the finger closes within the spinigerous lobe and between the latter and a group of 3-4 short, stout spines, which are easily overlooked on account of the dense setose covering; in ♀ very like Walker's figure of the ♂, but without any projection near the hinge, there are 5-6 not very stout spines in this position, passing gradually into setae proximally, the proximal portion with fascicles of moderately long setae, setae on lower margin of 5th joint serrulate.

Uropod 3, the outer ramus is distinctly, though not greatly, longer than the inner.

Length.—14 mm.

Colour.—Indigo-purple, deeper dorsally, with numerous whitish or pale yellowish dots, the most conspicuous being a transverse row on the posterior margin of each peraeon segment, a dorsal patch at the base of pleon segments 3 and 4 whitish, side-plates and 2nd joints of peraeopods 3-5 paler, with the whitish dots less conspicuous, antennae

purple dotted with whitish, hand of 2nd gnathopod distally purplish, peraeopods and uropods banded with the same colour, telson light.

Locality.—Durban, 28/5/17 (H. W. Bell-Marley), 1 ♂, 1 ovigerous ♀. (S.A.M., No. A 4573.)

Geogr. Distribution.—Ceylon (Walker).

This species is closely allied to *pectenicrus* (of which *serrula* Wlkr. is a synonym), the chief resemblance being in the hand of the 2nd gnathopod in the ♂. This resemblance is so close that at first sight one might be tempted to regard the two forms as varieties of one species, the presence or absence of spines on the lobe near the finger-hinge being certainly not of specific importance.

But this feature is coupled with the difference in the hind margin of the 2nd joint of peraeopods 4 and 5, a difference which is found in both sexes: in *spinimanus* there are only slight serrations, whereas in *pectenicrus* there is a remarkable series of comb-like teeth.

Moreover, in the living animals there is the not unimportant feature of a different colour-pattern. By comparing the above description of the colour of *spinimanus* with that given for *pectenicrus* in a former paper (Barnard, *loc. cit.*, p. 199), it will be seen that in the latter the predominating or ground colour is white with purple markings, whereas in the former it is purple with white dots.

FAMILY TALITRIDAE.

Gen. PARHYALELLA Kunkel.

1910. *Parhyalella*. Kunkel, Tr. Conn. Ac. Sci., vol. xvi, p. 74.

Parhyalella natalensis (Stebb.).

1917. *Exhyalella natalensis*. Stebbing, Ann. Mag. Nat. Hist. (8), vol. xx, p. 435.

1918. „ „ *Id.*, Ann. Durban Mus., vol. ii, pt. 2, p. 67, pl. xi.

Up to the present this genus has contained only the single species *F. batesoni* Kunkel, an inhabitant of the Bermuda Islands.

Length.—♂ 10 mm., ♀ 13 mm.

Colour.—Ground-colour, pale yellow or ochraceous, closely reticulated and spotted with red, which may vary in tint from a brick-red to a crimson-red, antennae and hand of 2nd gnathopod tinged with the same colour, 2nd joint of peraeopods 3-5 spotted like the rest of body, the terminal joints of these 3 peraeopods, and of the uropods, white; eye blackish-brown.

Locality.—Durban, 28/5/17 (H. W. Bell-Marley), ♂♂, ovigerous ♀♀, and juv. Whether taken between tide-marks or at low-tide not stated by the collector. (S.A.M., No. A 4574.)

Easily distinguished from *batesoni* by the 1st and 2nd gnathopods, and the details of the antennae.

Gen. ORCHESTIA Leach.

- 1813-14. *Orchestia*. Leach, Edinb. Encycl., vol. vii, p. 402.
 1890. „ Sars, Crust. Norw., vol. i, p. 24.
 1906. „ Stebbing, Das Tierreich, 21, pp. 530, 735.
 1907. „ Chevreux, Mem. Soc. Zool. Fr., vol. xx, p. 491.
 1909. „ Chilton, Subantarctic Is., New Zealand,
 vol. ii, p. 632.

Orchestia excavata Chevr.

1902. *Orchestia excavata*. Chevreux, Bull. Mus. d'Hist. Nat. Paris,
 1902, No. 7, p. 521.
 1908. „ „ *Id.*, Res. Sci. Voy. en Afr. d'Edouard
 Foa, p. 570, fig. (redescribed).

“ *Male*.—Body strongly compressed. First two side-plates a little deeper than their segments. Fifth side-plate much longer than deep. Pleon segments 1-3 ending in a small acute point, posterior margin crenulate. Fifth segment projecting strongly over the 6th. Eyes large, oval. First antennae more or less injured in all the specimens. Second antennae scarcely equal to one-third length of body. Ultimate peduncular joint much longer than penultimate. Flagellum shorter than last two peduncular joints together, 13-jointed. First gnathopod almost as in the type species, *O. littorea* (Mont), but much more robust. Palm slightly concave. Finger as long as palm. Sixth joint of 2nd gnathopod oval, palm separated from the posterior margin only by a small notch. Finger strongly curved, much longer than palm. Peraeopods armed with numerous small spines. Posterior margin of 2nd joints of peraeopods 3-5 crenulate. Ramus of uropod 3 as long as peduncle. Telson slightly emarginate, armed with 12 unequal spines.

“ *Female*.—Second antennae a little shorter than those of male, flagellum only 12-jointed. Sixth joint of 1st gnathopod much shorter than 5th. Palm very small, strongly excavate. Finger 3 times as long as palm. Sixth joint of posterior gnathopod produced well beyond extremity of finger.

“ *Longeur*.—7 mm.

“Haute-Zambèze, without more precise locality.” (Chevreux, 1902.)

Chevreux remarks that no other *Orchestia* has yet been found at so great a distance from the sea coast.

FAMILY PHOTIDAE.

? Gen. EURYSTHEUS Bate.

? *Eurystheus scissimanus* n. sp.

(Plate XXXIV, fig. 15.)

As there is, unfortunately, only one specimen of this form, and as it is in some respects defective, a brief description must suffice. From the character of the hand of the 2nd gnathopod it is, however, easily recognised.

The absence of the antennae and the ♀ leaves it uncertain whether this form should be assigned to *Eurystheus* or *Podoceropsis*.

Body slender. Head with antero-lateral angles quadrate and occupied by the rather large subtrigonal or subrotund eyes. Gnathopod 1 simple, 6th joint scarcely as large as 5th, both joints setose in the inferior margin.

Gnathopod 2, 5th joint short and triangular, 6th oblong, widest across the transverse palm, which has a deep and narrow incision in the middle, defining angle with a short but strong tooth, inferior margin setose, finger matching palm, its inner margin with a few fine serrations.

Second joint of posterior peraeopods with hind margin feebly serrate.

Telson apically subtruncate, with a spine at each postero-lateral angle.

Length.—4 mm.

Colour.—In spirit, pale pinkish, eyes reddish.

Locality.—Vasco da Gama (Cape Peninsula), N. 40° E., distant 13 miles, 120 fathoms, 1 specimen. S.S. “Pieter Faure,” 4/5/00. (S.A.M., No. A 6042.)

FAMILY AMPITHOIDAE.

Gen. AMPITHOE Leach.

See 1916. Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 253.

Ampithoe africana n. sp.

Antero-lateral angles of head obtuse. Eyes subrotund. Side-plate 1 produced forwards. Postero-inferior angle of 3rd pleon

segment rounded-quadrate. Telson broader than long, with 2 setae at each lateral angle.

First antenna not reaching beyond end of 3rd peraeon segment, 2nd joint slightly shorter than 1st, 3rd $\frac{1}{2}$ length of 2nd, all with rather long apical setae, flagellum longer than peduncle, ca. 20-jointed, each joint with a distinct whorl of setae.

Second antenna equal to 1st in ♂, not quite so long in ♀, stout, ultimate peduncular joint not as long as penultimate, both joints in ♂ with a dense fringe of setae along lower margin, in ♀ with several tufts of setae but not so dense as in ♂, flagellum subequal to peduncle ca. 16-jointed, each joint with a whorl of setae which are more numerous on the lower than the upper surface, especially in ♂.

Inner plate of 1st maxilla very small, with 1 seta.

First gnathopod in ♂, 2nd and 3rd joints apically lobed, 5th shorter than 6th and a little wider than base of 6th, 6th ovate, widest at base, hind margin shorter than the oblique sinuous palm, which is convex distally and concave proximally, defining angle obtuse, with a stout spine, lower surface of 6th sparsely setose, finger matching palm, inner margin serrulate; in ♀ similar but smaller, hind margin subequal to palm, which is convex throughout, except for a small shallow indent where the palmar spine is situated.

Second gnathopod in ♂ larger than 1st, 2nd and 3rd joints apically lobed, 6th wider than and considerably longer than 5th, ovate-oblong, the slightly sinuous hind margin longer than the palm, which is oblique, straight or very slightly concave, defining angle obtuse (ca. 130°), with a short stout spine, palm and hind margin sparsely setose, finger slightly overlapping palm, inner margin serrulate; in ♀ similar but smaller, 6th more oval, hind margin only slightly longer than palm, which is slightly convex, defining angle obtuse with a moderately long spine.

Peraeopods 1 and 2 stout, 2nd joint twice as long as broad.

Peraeopods 3-5 stout, 6th joint with 3 very prominent outstanding spines on distal anterior margin, and a 4th recurved immediately before the finger-hinge.

Uropod 3 with 4 spines and a tuft of setae on distal margin, outer ramus longer than inner, with 2 hooked spines.

Length.—9 mm.

Colour.—Pinkish-red, closely speckled with a deeper tint, eyes deep crimson.

Locality.—East London (R. M. Lightfoot), 1 ♂, 3 ovigerous ♀♀. (S.A.M., No. A 4415.)

Judging from Bate's figure, this species bears considerable resemblance to *A. brasiliensis* Dana in the strongly setose antennae. Bate also represents some strong spines on the 5th and 6th joints of peraeopod 4, but the whole figure is very crude, and a comparison with the present specimens in this respect is impossible.

The 2nd gnathopod of the ♂ is very similar to that of the ♀ of *A. kergueleni* Stebb. (1888, *Challeng. Rep.*, vol. xxix, pl. cxvii), but the ♀ of the present species has the palm of this gnathopod convex instead of concave.

EXAMPITHOE n. g.

Side-plates shallow, not deeper than long, 5 only a little deeper than 4. First antenna without accessory flagellum. Mandible with molar greatly reduced; palp very slender, 3rd joint shortest, tipped with 2 setae only. First maxilla with very stout palp, 2nd joint being ovate-lanceolate, not linear and curved. Maxilliped as in *Ampithoe*, but with a very stout spine-tooth on apex of inner plate. First gnathopod stouter, though shorter, than 2nd, both subchelate. First and 2nd peraeopods glandular. Third peraeopod not reverted, longer than 2nd. Peraeopods 3-5 with 6th joint apically expanded. Outer ramus of 3rd uropod with 2 hooks. Telson simple, not uncinata, lateral angles obsolete.

From the above diagnosis it will be seen that a new genus is unavoidably necessary. The mandibular palp is even more slender than in *Paragrubia* Chevr., 1901. The tooth on the inner plate of the maxilliped appears to be unique in the family, although in itself it is not a very important point.

Biancolina Della Valle, 1893, is closely allied in the shape of the side-plates and the length and non-reverted position of the 3rd peraeopod. The new genus, however, is easily separated by the 2nd antenna being almost as long as the 1st, and the stout gnathopods.

Exampithoe natalensis n. sp.

(Plate XXXIV, figs. 16, 17.)

Body rather slender, moderately compressed. Integument sparsely and shallowly pitted, the pits most numerous on the side-plates. Head equal in length to first 2 segments together. Eyes small, oval. Side-plate 1 rhomboidal, longer than deep, antero-inferior angle a little less than a right angle; 2 and 3 longer than deep, antero-inferior angles rounded; 4 almost as deep as long, otherwise similar to 2 and 3; 5 a little deeper than 4, but longer than deep, posterior lobe small,

the anterior one rounded below ; 6 and 7 very shallow, semicircular, 6 very slightly bilobed. Pleon segments 1-3 with postero-inferior angles rounded.

Telson semicircular, broader than long, lateral angles obsolete, apex with a few setae.

First antenna half length of body, 1st joint stouter and a little longer than 2nd, 3rd short, $\frac{1}{4}$ length of 2nd, flagellum ca. 28-jointed, each joint with an apical whorl of setae and a sensory filament on lower side.

Second antenna nearly as long as 1st, ultimate peduncular joint shorter than penultimate, flagellum about equal to peduncle, ca. 22-jointed.

Upper lip entire rounded, margin setulose.

Lower lip similar to Della Valle's figure of that of *Biancolina*.

Mandibles, cutting-edge 8-dentate in left, 10-dentate in right, teeth blunter in right, secondary cutting-edge in left 6-dentate, obsolete in right, spine-row with 4 slender spines in left, obsolete in right, molar much reduced, palp very slender, 2nd joint a little longer than 1st, 3rd $\frac{1}{2}$ length of 2nd, tipped with 2 fine setae, no setae on the other joints.

First maxilla, inner plate small, tipped with 1 seta, outer plate with 10 strong, minutely denticulate spines, palp stout, 2nd joint ovate-lanceolate, inner margin and apex setose, a few setae also on the outer margin.

Second maxilla, plates equal in length, but outer broader than inner, inner margin of inner and apices of both setose.

Maxilliped, inner plate with a large very stout spine-tooth on apex, outer plate reaching to middle of 3rd joint of palp, inner margin with ca. 13 unserrated spines, changing gradually into the apical setae.

First gnathopod, 2nd joint strongly lobed on anterior apex, 5th and 6th subequal in length, 6th with palm oblique, concave, longer than hind margin, defining angle rounded-quadrate, with a strong spine, a smaller spine at the finger-hinge, finger gently curved, closing within defining angle, lower margins of 4th-6th joints and the palm thickly clothed with very finely plumose setae.

Second gnathopod longer, but not quite as stout as 1st, 2nd joint apically lobed, 5th and 6th similar to those of 1st gnathopod but more elongate, palm only a little longer than hind margin of 6th, concave, defining about 160° , with a stout spine, finger as long as palm, lower margins of 4th-6th and the palm setose as in 1st gnathopod.

First and second peraeopods, 2nd joint ovate, twice as long as broad, glandular.

Third peraeopod longer than the preceding, not reverted, 2nd joint twice as long as broad, 4th longer than 5th, 6th longer than 4th, apically expanded, anterior margin with 4 spines, 2 spines at angle of palm and another curved one at finger-hinge, finger overlapping palm.

Fourth and fifth peraeopods longer, 2nd joint narrower than in 3rd peraeopod, but proportions of the 4th-6th joints as in that peraeopod, only more elongate, armature of spines also the same.

First uropod, peduncle longer than rami, which are subequal.

Second uropod, peduncle and inner ramus subequal, outer shorter.

Third uropod reaching a little beyond the others, stout, peduncle with apical whorl of setae and 1 spine on upper apical margin, inner ramus as long as broad, apically rounded, with 2 spines and some setae, outer ramus as long as and much wider than inner, with 2 apical recurved hooks, upper margin without setules.

Length.—14 mm.

Colour.—In spirit, pale yellowish-white, eyes black.

Locality.—Port Shepstone, Natal, September 1916 (H. C. Burnup), 1 specimen. (S.A.M., No. A 4192.)

FAMILY COROPHIIDAE.

Gen. SIPHONOCETES Kröyer.

1845. *Siphonocetes*. Kröyer, Naturh. Tidsskr., ser. 2, vol. i, pp. 481, 491.
1916. „ Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 269 (references).

Siphonocetes dellavallei Stebb.

1893. *Siphonocetes typicus* (part). Della Valle, F. u. Fl. Neapel, vol. xx, p. 358, pl. iv, figs. 11-13; pl. vii, figs. 23-28.
1899. „ *dellavallei*. Stebbing, Ann. Mag. Nat. Hist., ser. 7, vol. iii, pp. 241, 350.
1906. „ „ *Id.*, Das Tierreich, 21, p. 684.

Rather small specimens, differing in no other respects from Stebbing's diagnosis.

Length.—4 mm.

Colour.—In spirit, pale yellowish, eyes pale brown.

Locality.—From stomach of a White Stumpnose (*Chrysophrys globiceps*) caught in Table Bay, 1906 (Dr. J. D. F. Gilchrist), 10 specimens. (S.A.M., No. A 4366.)

Geogr. Distribution.—Bay of Naples, 10–20 metres. On fine sand, constructing free tubes (Stebbing).

Two other specimens, which, so far as their hardened condition allows of examination, do not seem separable from the above species, were taken in the shrimp trawl, Cape Point, N.E. $\frac{3}{4}$ N., distant 39 miles, 310–560 fathoms, 17/9/03. (S.A.M., No. A 5912.)

FAMILY PODOCERIDAE.

Gen. PODOCERUS Leach.

See Barnard, Ann. S. Afr. Mus., vol. xv. pt. 3, p. 274.

In "Aus Namaland und Kalahari" (Jena, 1907), Dr. L. Schultze has given an interesting account, illustrated by a text-figure (p. 34), of the habits of a species of *Podocerus* inhabiting the shores of South-West Africa. The animals are 2 mm. long, with brown transverse bands across the back. They burrow in the soft mud, and build small upright tubes projecting about 4 mm. above the surface of the mud. These tubes are sometimes solitary, sometimes in groups; they are attached to some firm object in the mud, and are composed of grains of mud and sand, together with sponge spicules and Diatom tests.

The species has not yet been identified or described.

Podocerus brasiliensis (Dana).

- | | | |
|----------|---------------------------------|--|
| 1853–55. | <i>Platophium brasiliense</i> . | Dana, U.S. Expl. Exp., vol. xiii, 2, p. 838, pl. lv, figs. 9a–l. |
| 1904. | „ <i>synptochir</i> . | Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep., 17, p. 296, pl. viii, fig. 52. |
| 1916. | <i>Podocerus</i> „ | Barnard, <i>loc. cit.</i> , p. 279. |
| 1917. | „ <i>brasiliensis</i> . | Stebbing, Ann. Durban Mus., vol. i, pt. 5, p. 447. |

Since the publication of my paper, in which the Durban specimens were identified with Walker's *synptochir*, my friend Mr. F. W. Edwards of the British Museum has sent me tracings of Dana's

figures. From a comparison of the figures, it is evident that Walker's name must become a synonym of Dana's.

Geogr. Distribution.—Tropical Atlantic.

Podocerus africanus Brnrd.

1916. *Podocerus africanus*. Barnard, *loc. cit.*, p. 278, pl. xxviii, figs. 24, 25.

Since describing this species very briefly, I have seen tracings of Dana's figures of *brasiliensis*, and find that it is very much more distinct from this latter species than I formerly thought.

Apart from the 2nd joints of the peraeopods, both gnathopods in both sexes show well-marked differentiating features. In gnathopod 1 the 5th joint is as long as the 6th, the latter more broadly oval. In gnathopod 2 both sexes lack the bundles of spines on the front margin of the hand, and there is only a small stretch of *short* plumose setae on the palm in the ♂ around the 2 teeth. The finger meets the acute process of 4th joint, thus forming a kind of chela. This latter feature clearly distinguishes this species from both *variegatus* Leach and *brasiliensis* (Dana).

The Natal specimens agree in structural details with the Cape specimens, but are a trifle larger and more robustly built. Thus the 2nd antenna in both sexes is stouter, and in the ♂ possesses a dense fringe of setae on the lower margins of 4th and 5th peduncular joints and 1st flagellar joint.

Also the 2nd gnathopod in the ♂ is more strongly developed; 4th joint very strongly produced, front and hind margins of 6th parallel, the latter therefore concave, with the 2 palmar teeth near the hinge, but without any fringe of hairs.

Length.—6 mm.

Colour.—In spirit, dull pinkish with minute black pigment specks.

Locality.—Port Shepstone, Natal, September 1916 (H. C. Burnup), 2 ♂♂, 2 ovigerous ♀♀. (S.A.M., No. A 4193.)

Podocerus multispinis n. sp.

(Plate XXXIV, fig. 18.)

♂ *and juv.*—Head with a blunt median point and rounded antero-lateral angles, in which the prominent eyes are situated; a median spiniform tubercle somewhat behind the level of the eyes.

Peraeon broad and elliptical in both sexes, not keeled, with spiniform

tubercles arranged as follows: a transverse row of 3 on both the anterior and posterior margins of segment 1, a single transverse row of 3 on the posterior margins of segments 2-7, those on the last segment larger than the preceding. These spines project straight upwards, though the anterior and posterior ones curve a little respectively forwards and backwards. In the young they are shorter and less spiniform. No other projections on the peraeon; the lateral margins produced slightly over the insertions of the side-plates, but not thickened. Side-plate 1 produced forwards nearly to the level of the eye, inferior margin entire; side-plates 2-4 notched on inferior margin; 5 and 6 with the anterior lobe much deeper than the posterior; 7 produced backwards in a bluntly rounded lobe. All the side-plates with stiff outstanding setae.

Pleon segments 1 and 2 both with a transverse row of 3 spines on posterior margin; segment 3 and the following ones smooth.

Telson apically rounded, with 2-3 setae on the dorsal projection.

First antenna, 2nd and 3rd joints subequal, flagellum 8-jointed, the 1st joint much the longest, accessory flagellum 1-jointed, equal to $\frac{1}{3}$ 1st joint of flagellum; flagellum and peduncle fringed on lower surface with long setae.

Second antenna longer than 1st, ultimate joint longer than penultimate, flagellum equal to penultimate peduncular joint, 3-jointed, the joints successively decreasing in length.

Mandible with 3rd joint of palp longer than 1st, but shorter than 2nd, twice as long as broad. Other mouth-parts without particular features.

First gnathopod in ♂, 2nd, 5th, and 6th joints subequal to one another, 6th broader than 5th, increasing in width to the transverse palm, defining angle rounded-quadrate with a spine, lower margins of 4th-6th joints, the palm and the inner surface of 6th with long setae, finger matching palm.

Second gnathopod in ♂, 2nd joint strongly keeled on both inner and outer margins, both keels ending apically in a rounded setiferous lobe; when the limb is flexed the 5th joint rests within these keels; 3rd very slightly keeled on the same margins as in 2nd, 4th apically rounded, 5th small but distinct from 6th, which is elongate oval, palm $\frac{2}{3}$ length of the joint, forming the lower margin but defined by a strong conical tooth, a square-topped tooth near the finger-hinge, and between this and the defining tooth a conical, obscurely bifid tooth, inferior margins of 4th and 6th joints rather densely setose, anterior margin of 6th with tufts of setae, finger not quite as long as palm. In immature speci-

mens the 6th joint is less elongate, the defining tooth not so strong, and the oblique, convex palm with 2 little indents.

Peraeopods 1 and 2, 2nd joint twice as long as broad, anterior margin fringed with long setae.

Peraeopods 3-5, 2nd joint becoming successively stouter, in 5th peraeopod half as long as broad.

All the peraeopods rather strongly setose.

Uropods 1 and 2, inner ramus longer than outer, inner margin of peduncle and of inner ramus with a row of closely set spines like a comb.

Uropod 3 scarcely as long as peduncle of 2nd, with 1-2 setae on rounded apex.

Length.—10 mm.

Colour.—In spirit, yellowish-white, eyes slightly darker.

Locality.—Cape St. Francis, N.E. by E. $\frac{1}{2}$ E., distant 36 miles, 70 fathoms, 1 ♂, 3 juv. on a club-shaped siliceous sponge; Constable Hill, N.N.E., distant 7 miles (near Saldanha Bay), 45 fathoms, 2 ♂♂, 9 juv. on and inside a tubular *Leuconia*-like sponge. S.S. "Pieter Faure," 19/2/02 and 11/3/02. (S.A.M., Nos. A 4416 and A 4417.)

This species is easily recognised by the ornamentation of the body, the 2nd gnathopod, and the row of closely set spines on the 1st and 2nd uropods.

Podocerus multispinis var. *levis* n.

Body oval, broader in ♀ than ♂. Head smooth, with the exception of a tiny acute tubercle between the eyes, scarcely visible in the ♀. Peraeon segments 1-3 transversely grooved. From about the 4th segment a very slight medio-dorsal keel begins, extending on to 3rd pleon segment, and produced on the posterior margins of segments 5-7 into a small backwardly projecting acute tooth. On pleon segment 1 there is a similar tooth, but on segments 2 and 3 the keel is merely rounded in profile. These teeth are present in the ♀ also, but even less prominent than in ♂.

The side-plates are not joined directly on to the lateral margins of the segments, but just below, so that the lateral margins project freely and give the appearance of there being two series of side-plates; their postero-lateral angles are bluntly pointed. The side-plates are shallow, the 1st acutely produced forwards, 2nd-4th with a notch on inferior margin, 5th with the anterior lobe twice as deep as the posterior; margins of each side-plate with stiff outstanding setae.

Telson with 2 setae on the moderately prominent dorsal conical process.

First antenna about $\frac{1}{2}$ length of body, 2nd joint slightly longer than 3rd, flagellum slightly longer than 2nd, ca. 9-jointed, accessory flagellum 1-jointed, lower margin of whole antenna fringed with long setae in both sexes.

Second antenna as long as body, ultimate peduncular joint slightly longer than penultimate, flagellum $\frac{2}{3}$ length of ultimate joint, 3-jointed, with a minute apical 4th joint.

Mouth-parts normal.

First gnathopod in ♂, 2nd joint slightly expanded on distal front margin, 5th equal to 2nd and longer than 6th, which is ovoid, hind margin slightly longer than the minutely crenulate palm, finger stout, with spinules on inner distal margin; in ♀ smaller, but otherwise similar.

Second gnathopod in ♂, 2nd joint stout, strongly expanded on both inner and outer anterior margins, distal anterior angles rounded, setiferous, 4th not produced, bluntly rounded distally, 6th broadly oval, palm about twice length of hind margin, defined by a strong conical tooth, near the finger-hinge a denticulated lobe followed by a conical tooth, lower margins of 4th and 6th with dense fringe of plumose setae, front margin of 6th with groups of setae, finger curved, not reaching defining tooth; in ♀ of the same general shape, but smaller, 2nd joint not so expanded on front margins, 4th apically bluntly rounded, 6th with the same armature on the palm, but not so well developed, fringe of setae on 4th and 6th sparse, front margin of 6th with groups of setae.

Peraeopods 1-5 furnished with rather numerous stiff, outstanding setae, 2nd joint oval-oblong, not strongly expanded.

Uropods 1 and 2, inner ramus longer than outer, inner margins of peduncle and inner ramus with numerous close-set spines.

Uropod 3 elongate-ovoid, with apical setae.

Length.—♂ 7 mm., ♀ 5 mm.; *breadth*, ♂ and ♀, 2 mm.

Colour.—In spirit, yellowish, eyes slightly deeper.

Locality.—Exact locality not recorded. Several ♂♂ and ovigerous ♀♀ on a branching Halichondrine sponge. S.S. "Pieter Faure." (S.A.M., No. A 4386.)

Although at first sight quite distinct from the typical *multispinis*, the only real difference separating the two forms is the almost complete absence of the dorsal spiniform tubercles in the variety. This cannot be regarded as of specific importance in the face of such a close

agreement as is found in the appendages and side-plates. Moreover, it is quite possible that intermediate forms exist which have not yet been discovered. For the present a varietal name seems justifiable. The description of the variety has been left exactly as it stood in my MSS. some while before the typical specimens were found amongst the "Pieter Faure" collections. The two descriptions, written thus quite independently of one another, will show how much alike the two forms are.

TRIBE CYAMIDEA.

FAMILY CAPRELLIDAE.

Gen. CAPRELLA Lam.

See 1916. Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 280.

Caprella scaura Templeton.

1836. *Caprella scaura*. Templeton, Tr. Entom. Soc. Lond., vol. i, pt. 3, p. 191, pl. xx, fig. 6.
1836. „ *nodosa*. *Id.*, *ibid.*, p. 192, pl. xx, fig. 7 (juv.).
1852. „ *attenuata*. Dana, U.S. Expl. Exp., vol. xiii, pt. 2, p. 817, pl. liv, figs. 1a-g.
?1855. „ *solitaria*. Stimpson, Pr. Ac. Nat. Sci. Philad., vol. ii, p. 393.
1882. „ *scaura*. Mayer, Caprelliden, F. u. Fl. Neapel, p. 65.
1888. „ „ Stebbing, Challeng. Rep., vol. xxix, p. 1257, pl. cxliv (♀).
1890. „ „ Mayer, Nachtrag Caprelliden, F. u. Fl. Neapel, p. 70, pl. iv, figs. 40-51; pl. vi, fig. 41; pl. vii, figs. 2, 35, 36.
1903. „ „ *Id.*, Siboga Exp. monogr., 34, p. 117, pl. v, figs. 13-18; pl. x, fig. 11.
1903. „ *laevipes*. *Id.*, *ibid.*, p. 108, pl. v, fig. 2; pl. viii, figs. 14-16.

Two male specimens and one young one are referable to this species. The tooth on the head is strong. Segments 3-5 each with a pair of small subdorsal tubercles, segment 6 with a single median one. In the young specimen only the latter single tubercle is present. No ventral spine between bases of the 2nd gnathopods.

Flagellum of 1st antenna 14-jointed.

Second gnathopod with the hand most resembling Mayer's figure 47 on pl. iv of his "Nachtrag."

The head plus 1st segment and the 2nd segment are neither very elongate, scarcely longer than the 3rd segment.

Length.—11 mm.

Colour.—In spirit, dull pinkish, eyes darker.

Locality.—Off Malagass Island (Saldanha Bay), 20 fathoms, 2 ♂♂, 1 juv. on a Sea-urchin. S.S. "Pieter Faure," 13/3/02. (S.A.M., No. A 4395.)

Geogr. Distribution.—Mauritius (Templeton, *scaura* and *nodosa*); Rio Janeiro (Dana, *attenuata*); Japan, 50 fathoms (Stebbing); Japan and China Sea, 25–80 fathoms; California, 1–15 fathoms; W. Indies, Chile (Mayer); Port Natal and Kalk Bay (Mayer, *laevipes*).

Although Mayer states that Stimpson's *solitaria* is quite unrecognisable, I think there is great probability of its belonging here. The present species is the only Cape Caprellid which has a strong cephalic tooth; but, on the other hand, Stimpson describes the 2nd gnathopod as having only "2 spines within," which does not quite agree with *scaura*.

With regard to *laevipes*, although it forms a very distinct dwarf variety, it cannot in my opinion be separated from the larger forms. Mayer himself notes the resemblance of the 2nd gnathopod to that of *scaura*; and one has only to compare figures 2 and 18 on pl. v of his Siboga monograph to feel convinced that *laevipes* should not be raised to specific rank. Besides its small size, it is characterised by not having the anterior segments specially elongate in the ♂, a feature which it shares with the 2 ♂♂ above described, and which are undoubtedly examples of *scaura*.

Gen. ORTHOPROTELLA Mayer.

1903. *Orthoprotella*. Mayer, Siboga Exp. monogr., 34, p. 35.

Orthoprotella mayeri Brnrd.

1903. *Orthoprotella* sp. Mayer, *loc. cit.*, p. 36, pl. i, figs. 25, 26; pl. vi, figs. 43, 44, 46; pl. ix, fig. 15.

1916. „ *mayeri*. Barnard, Ann. S. Afr. Mus., vol. xv, pt. 3, p. 284.

Further specimens have come to light, which enable me to give some account of the variability in the ornamentation.

Young specimens up to 8 or 10 mm. are quite smooth, after which

the spines begin to develop. When well-developed there is a lateral spine on the anterior margin of segment 2 and another above the base of 2nd gnathopod, also a dorsal pair inclined somewhat forwards. On segment 3 there is a similar antero-lateral spine and a pair of dorsal tubercles, always low and blunt and frequently obsolete.

Some, or even, in the case of one ♂ specimen 14 mm. long, all of these spines and tubercles may be very feebly developed, the greatest development not necessarily occurring in the largest specimens. In the present collection the ♀♀ are more strongly spinose than the ♂♂.

The 4th segment may also exceptionally have 2 very small dorsal tubercles.

Segments 1, 2, and 3, but more often 2 and 3 only, have the posterior portion raised into a medio-dorsal keel, which, however, is never apically acute or tooth-like.

One of the specimens was stated in my original description to have a single dorsal spine on segment 2; on re-examination I find that its fellow had been broken off.

The 2nd gnathopod of the ♀ is similar to that of the ♂ and is almost equally strongly developed. The notch, which in my previous description was stated to lie between the venom-tooth and the inferior margin, in reality lies between the tooth and the *palm*.

Peraeopod 3 slender. Peraeopods 4 and 5 moderately stout, 6th joint elongate, palm slightly concave, with 2 spines at proximal end.

Length.—♂ up to 20 mm., ♀ up to 14 mm.

Colour.—In spirit, dull pinkish or yellowish, eyes red-brown.

Locality.—Algoa Bay, 100 fathoms, 1 ♀, 1 juv. on *Melitodes*; Cove Rock, N.W. $\frac{3}{4}$ W., distant 13 miles, 80–130 fathoms, 2 ♀♀, 1 juv. on the Alcyonarian *Ceratoisid ramosus*; Cape St. Francis, N.E. by E., distant 32 miles, 74 fathoms, 2 ♂♂, 2 ♀♀; Cape Seal, N. by E. $\frac{3}{4}$ E., distant 37 miles, 80 fathoms, 2 ♂♂, 4 juv.; Cape Point, N. 16 E., distant 10 miles, 85 fathoms, 1 ♂. S.S. "Pieter Faure," 1/11/98, 30/7/01, 19/2/02, 20/2/02, and 5/9/02. (S.A.M., Nos. A 4398–A 4402.)

TRIBE PHRONIMIDEA.

FAMILY HYPERIIDAE.

Gen. EUTHEMISTO Bov.

1825. *Themisto*. Guérin, Encycl. Méth., t. 10 (nom. preocc.).

1887. *Euthemisto*. Bovallius, Bih. K. Sv. Vet. Ak. Handl., Bd. 11, No. 16, p. 21.

1888. *Euthemisto*. Stebbing, Challeng. Rep., vol. xxix, p. 1407.
 1889. .. Bovallius, K. Sv. Vet. Ak. Handl., Bd. 22, No. 7, p. 299.

Euthemisto gaudichaudii (Guérin).

1828. *Themisto gaudichaudii*. Guérin, Mém. Soc. d'Hist. Nat. Paris, vol. iv, pl. xxiii.
 1879. ,, *antarctica*. Thomson, Tr. N. Zeal. Inst., vol. ii, p. 243, pl. x, D, figs. 2, 3 (non Dana).
 1888. *Euthemisto gaudichaudii*. Stebbing, *loc. cit.*, p. 1410, pls. clxxii, clxxiii.
 1888. ,, *thomsoni*. *Id.*, *loc. cit.*, p. 1414, pls. clxxiv, clxxv.
 1889. ,, *gaudichaudii*. Bovallius, *loc. cit.*, p. 299, pl. xiii, figs. 44-46.
 1901. ,, *compressa*. Vosseler, Plankton Exp., vol. ii, G. e., p. 81.
 1907. ,, *gaudichaudii*. Walker, Nat. Ant. Exp., vol. iii, p. 9.
 1910. ,, *thomsoni*. Stebbing, Sci. Res. "Thetis," pt. 12, p. 655.
 1912. ,, .. Chilton, Tr. Roy. Soc. Edin., vol. xlviii, pt. 2, p. 514.

As Stebbing (1910) remarks, Vosseler and Bovallius are not quite in agreement as to the synonymy, except in refusing *thomsoni* specific validity. Whether *gaudichaudii* should be united with *compressa* or *spinosa* remains an open question until more abundant material is available.

Both specimens are non-ovigerous ♀♀, and have the head shorter than the first 3 peraeon segments together, the peraeon about equal to the pleon, uropod 1 reaching almost to apex of 2nd, and the telson $\frac{1}{4}$ length of peduncle of 3rd uropod.

Length (to end of 3rd uropod).—13 mm.

Colour.—Dull red.

Locality.—Cape Town Harbour, 1 specimen entangled in Hydroids, etc., growing on the harbour boom, 10/5/18 (R. W. E. Tucker); Lion's Head, S.E., 22 miles, 95 fathoms. 1 specimen. S.S. "Pieter Faure." (S.A.M., Nos. A 5914 and A 5972.)

Geogr. Distribution.—Southern Atlantic, Indian and Pacific Oceans, Antarctic.

FAMILY PHROSINIDAE.

Gen. PRIMNO Guér-Mén.

1836. *Primno*. Guérin-Méneville, Mag. de Zool., tom. 6, classe 7, p. 2.
1888. „ Stebbing, Challeng. Rep., vol. xxix, p. 1440
(references).

Primno macropa Guér-Mén.

1836. *Primno macropa*. Guérin-Méneville, *loc. cit.*, p. 4, pl. xvii,
figs. 1a-f.
1862. „ „ Bate, Cat. Amph. Brit. Mus., p. 322, pl.
li, fig. 8.
1888. „ „ Stebbing, *loc. cit.*, p. 1441, pl. clxxviii
(references).

The 5th joint of peraeopod 3 has 3 small teeth between the 4th and 5th long teeth, instead of 2, but otherwise there is no difference from Stebbing's figures and description.

Length.—8 mm.

Colour.—In spirit, semi-transparent, muscles and eyes dull pinkish.

Locality.—Cape Point, N. 89° E., distant 36 miles, 700 fathoms, 1 ovigerous ♀. S.S. "Pieter Faure," 20/8/03. (S.A.M., No. A 4420.)

Geogr. Distribution.—Chile (Guérin), 36° 32' S., 132° 52' W., South Pacific (Stebbing).

FAMILY VIBILIIDAE.

1910. *Vibiliidae*. Stebbing, Gen. Cat. S.A. Crust., p. 474.
1912. „ Behning, Zoologica, vol. lxxvii, p. 211 (revision).

Gen. VIBILIA M. Edw.

1830. *Vibilia*. M. Edwards, Ann. Sci. Nat., vol. xx, p. 386.
1887. „ Bovallius, K. Sv. Vet. Ak. Handl., vol. xxi, No. 5,
p. 43.
1910. „ Stebbing, *loc. cit.*, p. 474.
1913. „ Stewart, Ann. Mag. Nat. Hist., ser. 8, vol. xii,
p. 246.
1918. „ Stephensen, Rep. Dan. Oceanogr. Exp., vol. ii,
D. 2, p. 33.

Vibilia armata Bov.

1887. *Vibilia armata*. Bovallius, Bih. K. Sv. Vet. Ak. Handl.,
Bd. xi, No. 16, p. 10.
1887. „ „ *Id.*, *loc. cit.*, p. 69, pl. x, figs. 15-22.

1901. *Vibilia armata*. Vosseler, Plankton Exp., vol. ii, G. e., p. 125.
 1903. „ „ Walker, Ann. Mag. Nat. Hist., ser. 7, vol. xii, p. 232.
 1904. „ „ Stebbing, Tr. Linn. Soc. Lond. Zool., vol. x, pt. 2, p. 31.
 1906. „ „ Tattersall, Fish. Irel. Sci. Inv., 1905, vol. iv, p. 15.
 1911. „ „ Sexton, J. Mar. Biol. Ass., vol. ix, pt. 2, p. 222.
 1913. „ „ Stewart, *loc. cit.*, p. 250.
 1918. „ „ Stephensen, *loc. cit.*, p. 46, figs. 15, 16.

A single ♂ specimen agreeing with Bovallius' description and figures except in one particular. The eyes are very much larger, being about as large as in *V. macropis* Bov. (*loc. cit.*, pl. viii, fig. 1), but composed of considerably fewer ommatidia than in the latter species.

Terminal joints of the 1st antenna quite obsolete; 2nd antenna 8-jointed.

Length.—7 mm.

Colour.—In spirit, dull pinkish, eyes deep red-brown.

Locality.—Lion's Head (Cape Town), S.E. $\frac{1}{4}$ E., distant 50 miles, 250 fathoms, 1 ♂. S.S. "Pieter Faure," 2/4/02. (S.A.M., No. A 4392.)

Geogr. Distribution.—Tropical and South Atlantic (Bovallius); Bay of Biscay, 0–50 fathoms (Stebbing and Sexton); North Atlantic, 510–790 fathoms (Walker); West Coast of Ireland, 30–750 fathoms (Tattersall); $36^{\circ} 3\frac{1}{4}'$ S., $12^{\circ} 50\frac{1}{4}'$ E., and $35^{\circ} 14\frac{1}{4}'$ S., $15^{\circ} 11\frac{3}{4}'$ E. (Stewart); a long list of stations in Mediterranean and Atlantic is given by Stephensen.

Miss Stewart adds in brackets after the last locality, "near Tristan da Cunha." It is, however, much nearer to the Cape than to that island.

Vibilia hodgsoni Stewart.

1913. *Vibilia hodgsoni*. Stewart, *loc. cit.*, p. 251, pl. vi, figs. 1–6.

Locality.— $36^{\circ} 3\frac{1}{4}'$ S., $12^{\circ} 50\frac{1}{4}'$ E. (Stewart).

Vibilia gracilentia Bov.

1887. *Vibilia gracilentia*. Bovallius, *loc. cit.*, p. 67, pl. x, figs. 1–14.
 1901. „ „ Vosseler, Plankton Exp., vol. ii, G. e., p. 125.

1909. *Vibilia gracilentata*. Walker, Tr. Linn. Soc. Lond. Zool.,
vol. xiii, pt. 1, p. 53.

1913. „ „ Stewart, *loc. cit.*, p. 250.

Locality.— $35^{\circ} 14\frac{1}{4}'$ S., $15^{\circ} 11\frac{1}{4}'$ E. (Stewart).

Geogr. Distribution.—Atlantic (Bovallius); Gulf of Florida, N. and S. Equatorial currents (Vosseler); Indian Ocean, 200–600 fathoms (Walker).

This species is included under *V. armata* by Stephensen, 1918.

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EXPLANATION OF PLATE.

FIG.

1. *Trischizostoma serratum* n. sp. 1st gnathopod.
2. *Phoxostoma algoense* n. g. et sp. Maxilliped.
3. *Uristes induratus* n. sp. 1st gnathopod.
4. *Ampelisca byblisoides* n. sp. 5th peraeopod.
5. " *excavata* n. sp. Telson and 3rd uropod.
6. " " " 4th peraeopod.
7. " " " 5th peraeopod.
8. *Leucothoe ctenochir* n. sp. 2nd gnathopod.
9. *Aceroides limicola* n. sp. 1st gnathopod.
10. " " " 3rd peraeopod.
11. *Austrosyrrhoe crassipes* n. g. et sp. 1st gnathopod.
12. *Halice anacantha* n. sp. 1st peraeopod.
13. *Platyischnopus capensis* n. sp. Telson.
14. " " " 3rd uropod.
15. *Eurystheus scissimanus* n. sp. 2nd gnathopod.
16. *Exampithoe natalensis* n. g. et sp. Mandible.
17. " " " 1st gnathopod.
18. *Podocerus multispinis* n. sp. 2nd gnathopod.